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ABSTRACT

In late 1988, on the occasion of its 25th anniversary celebration, the International Institute for Educational Planning organized an international workshop to review the major problems faced by education today and to consider the future of educational planning worldwide. The workshop brought together researchers, planners, and specialists from all ideological, political, and geographical horizons to tackle topics such as the influence of economic and social change on education, educational finance difficulties, declining educational quality, preparation for employment, educational management issues, and educational planning prospects. This volume includes a selection of workshop papers, including a "Synthesis Report of the Workshop" (Francoise Caillods); "The Economic and Socio-Cultural Situation in Socialist Countries with Particular Emphasis on the USSR" (George Skorov); "The Financing of Education: Impact of the Crisis and the Adjustment Process" (Claude Tibi); "Teaching and Learning Conditions in Developing Countries" (Francoise Caillods and T. Neville Postlethwaite); "Universities and Development in Africa: Problems and Challenges for Planning" (Miala Diambomba); "Education, Work, and Employment: Present Issues and Future Challenges in Developed Countries" (Henry M. Levin and Russell W. Rumberger; "The Economics of Education: A More Than Slightly Jaundiced View of Where We Are Now" (Steven J. Klees); "The Role of the State in Education" (Juan Carlos Tedesco); and "Does Education Need Strategic Planning?" (Sylvain Lourie). Each chapter is followed by numerous bibliographic references. Appendices contain lists of participants and of 25th anniversary booklets. (MLH)

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HE PROSPECTS FOR DUCATIONAL PLANNING

workshop organized by IIEP on he occasion of its XXVth anniversary

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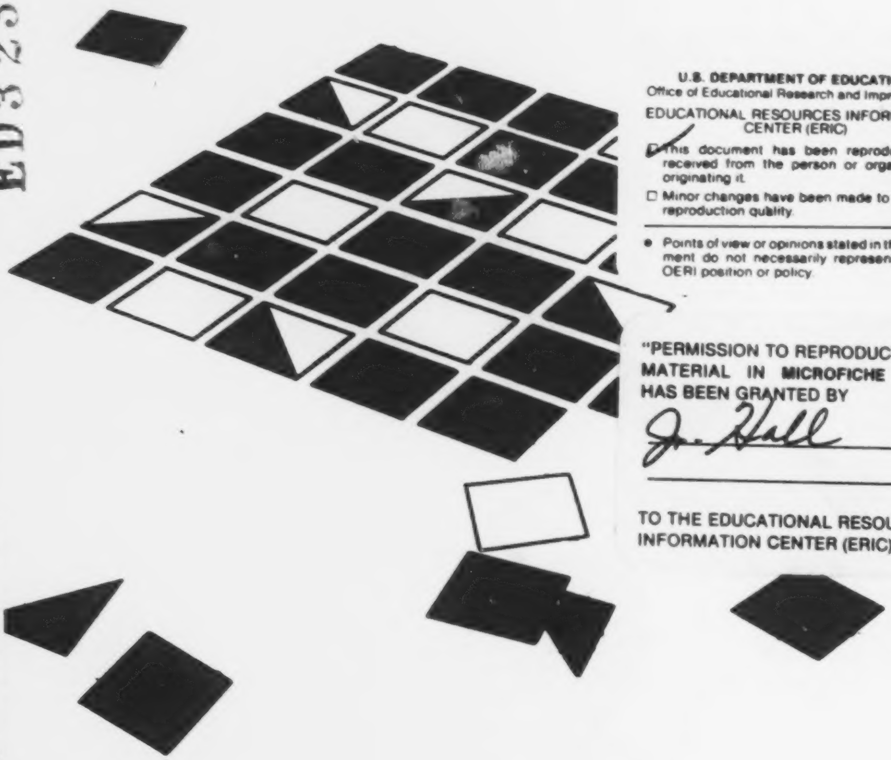
Edited by Françoise Caillods



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The prospects for educational planning

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The prospects for educational planning

A workshop organised by IIEP on
the occasion of its XXVth anniversary

Edited by Françoise Caillods

Unesco : International Institute for Educational Planning

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Preface

When the International Institute for Educational Planning was created as part of Unesco 25 years ago, the world was experiencing unprecedented economic growth and educational development. Numerous nations, many of which had just won their independence, decided to expand their school systems quickly for the purpose of fostering economic development and equality of opportunity. To guide and plan for such expansion, most countries then set up one or several planning units which were principally assigned the task of making estimates of their economies' skilled manpower requirements and planning the human, physical and financial resources needed for education.

Some 25 years later, the economic crisis has thoroughly altered the international and national scene. The debt of developing nations has risen sharply. Each country now finds itself with much more limited resources than previously, and the educational sector more difficult to manage. Several developing countries are wrestling with the problems of scarce resources precisely at a time when a runaway increase in population, inadequate enrolment levels, and persistent disparities between social groups, regions and the genders keep the needs at an urgent level. Yet, since the economic crisis has aggravated the problems of unemployment, the role of education itself as a driving force for growth and development and a key factor in promoting equal opportunity has been brought into question. After watching so many excessive hopes get dashed, a number of countries are questioning the extent to which public funds should be devoted to education. Even the activity of educational planning, formerly regarded as the main instrument for managing educational policy, is being challenged. Countries are doubting the wisdom of planning at a time when there is little or no expansion to manage. Planning units are having more and more difficulty defining their role with respect to their central government administration — the mainstay of routine school management — they find it harder also to influence educational policy. Finally, from the theoretical standpoint, a growing number of people are inclined to find fault with States that play a dominant role in education, and suggest that market forces be allowed to regulate flows.

On the occasion of its XXVth anniversary celebration, the Institute could not fail to consider the future of educational planning worldwide and to review the specific opportunities it has for its future programme. Since its inception, after all, its training and research activities have been designed to reflect the historical development of ideas, approaches and methods in the field of educational planning. To that end, the Institute has had to monitor events and adapt to changing trends and new problems in the development of education throughout the world. In this spirit, it organized an international workshop at the end of 1988, bringing together some 90 researchers, planners, aid agency representives and other specialists from all ideological, political and social horizons. This workshop tackled a large number of topics, including the impact of economic and social change on education in various parts of the world, educational planning practices and prospects, and major problems in education, such as difficulties in financing, the decline in the quality of education, the administration of education, the relationship between education and employment, and the theoretical debate concerning the role of education in development and society at large.

The workshop offered the occasion for intense discussion, and clearly demonstrated that educational problems are encountered in all countries. Many common concerns were voiced, including worry about the decline in educational standards in some countries, the obligation of devising new ways to finance education, the need to grant more autonomy to individual schools, the necessity of paying more attention to policy implementation strategies, the requirement of handling the apparently paradoxical problems of the under-education and over-education of the labour force, etc. Never have the urgencies and priorities in education been felt so unanimously. Educational planning should be transformed so as to confront these issues with due rigour and imagination while continuing to provide a frame of coherence and a vision of the future of education.

Some 40 original papers were presented and discussed during the workshop. The richness and diversity of these contributions made it extremely hard to select only a few of them for publication. This book includes a representative sample of the papers, together with a summary of the debates and the conclusions of the workshop. Other papers are being published in a special series of booklets, issued for the XXVth anniversary, covering a variety of topics, such as new educational technologies, educational administration, and new trends in educational planning.

The task of reflecting on the future of educational planning is not complete. The workshop identified a number of avenues for further research which have given the Institute inspiration in preparing its programme of activities for its new Medium-Term Plan.

Finally, we wish to thank the German Foundation for International Development for the financial support it so kindly provided for this workshop.

Jacques Hallak
Director

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Synthesis report of the workshop

Françoise Caillods

Introduction

It was in a context of unprecedented economic growth that educational planning developed in the sixties. It then found itself entrusted with the task of orchestrating a tremendous expansion of educational systems, with the dual aim of democratizing education, and of providing national economies with the qualified manpower they needed. In most countries one or more planning units were created. Great hopes were placed in such planning, which was meant to serve as a framework for setting objectives and priorities, to give direction to educational policies, and to optimize the use of resources.

Some thirty years later, educational planning seems to have lost a great deal of its prestige. It is accused by some of having had too much impact, and by others of not having had enough. Its methods and its tools are being questioned. That the context in which it operates has changed a great deal is undeniable.

Note : This report has been prepared with the kind assistance of Mr. Jean Lamoure. It made use of the various working group reports.

Working group by theme
"The financial crisis of education", Chairperson: A. Galou, Rapporteur: J.C. Eicher. "Quality of education", Chairperson: E.A. Yoloye, Rapporteur: A. Little. "Education, work and employment", Chairperson: Mrs. M. Jean, Rapporteur: V.M. Gomez. "Administration and management", Chairperson: A. Jemal, Rapporteur: T. Malan.

Regional Working Groups on the future of educational planning
Latin America: Chairperson: V. Urquidi, Rapporteur: J.C. Tedesco. French-speaking Africa and the Arab States: Chairperson: A. Lankoande, Rapporteur: M. Diambomba. English-speaking Africa: Chairperson: S. Mumbengewgi, Rapporteur: N.E. Mugogo. Asia: Chairperson: M. Ahmed, Rapporteur: T. Majumdar. Industrialised countries: Chairperson: H. Weiler, Rapporteur: Mrs. M. Jean.

First of all, the world economic crisis continues to affect economic growth, or anyway to create a very unstable situation. This limits the resources available for education, and weakens the potential for integration of trained young people. Secondly, the grand myths of education as a motor for development and a great leveller in society have waned. After thirty years of expansion of educational systems, serious problems have arisen, such as graduate unemployment and bureaucratization of the civil service. Other problems, such as inequality of educational and social opportunities, technological backwardness are persistent or even growing in intensity. The educational system is accused of all possible evils, and is losing its high priority in the allocation of public resources. Thirdly, acceleration of technological development, referred to by some as the new industrial revolution of the information and communication sciences, is making it more and more difficult to forecast industrial techniques and employment opportunities in the medium and long term.

Finally, the State seems less and less able to meet all the educational demands made on it; private education is expanding in many countries, and new forms of education outside of the traditional school system are emerging everywhere.

In this context of uncertainty, there are those who question the very justification for educational planning. They suggest stressing improvement in the management and administration of education, and letting the market regulate enrolment growth. At the opposite extreme, others see educational planning as being more necessary than ever before. It should be reinforced while changing in nature, becoming more flexible, broader as to its scope of action, and more open to various agents. Rather than retreating, planning should meet the challenges before it with rigour and imagination, leading into new strategies for action.

Objective and organization of the workshop

The objective of the workshop organized by the IIEP on the occasion of its XXVth anniversary was to review the current state of educational planning, its potential, its limitations and its future prospects. Starting with an analysis of its context — the economic and social crisis, the major problems facing education, the trends in the theoretical debate about the role of education in development and the role of the State in society — the aim was to examine how educational planning has evolved in practice, and to look at what its role should be in the future. An orientation note dealing with a number of questions related to the various points mentioned above, was the basis for discussion in the course of the seminar. Four main themes, constituting major constraints as well as important challenges for planning, were selected: the financial crisis in education; the deterioration of the educational process and the decline in the quality of education;

problems of employment and the relationships between education, work and employment; obstacles to the implementation of policies and the issue of administration and management of education. Various specialists were invited to submit contributions on the basis of the orientation note. A total of 43 original contributions were prepared for and discussed at the workshop, some of them constituting veritable state-of-the-art papers on a specific theme, others giving a synthesis of experience at a regional level (industrialized countries, Latin America), and still others presenting national case studies.

The workshop brought together some 90 participants from 35 countries of the North, the South, the East and the West; they included planning practitioners, officials responsible for educational policies, researchers, representatives of aid agencies, ex-Directors of the IIEP and former trainees — all of them personalities directly involved in the issues of education. The meeting itself was broken down into three phases, using different methods of presentation and discussion: the economic and social contexts and their consequences for education were the subject of the preliminary debates in a series of round table discussions. The participants then divided into working groups in order to reflect in greater depth on the four selected themes: the financial crisis in education; the quality of education; education work and employment; and the administration and management of educational systems, as well as to discuss possible policy options. The conclusions of these thematic working groups were presented in plenary session, before the participants again formed working groups, this time on a regional basis. Five groups were constituted: one for Latin America; one for the Arab States and French-speaking African countries; one for English-speaking Africa; one for Asia; and one for all the industrialized countries, both East and West. The participants were able to compare their experiences in the area of educational planning, and to exchange views about what the future role of such planning could and should be in the different regions. The way in which the structures and processes of planning should evolve, in order better to help countries to meet the challenges analyzed previously, gave rise to very fruitful discussion.

The present report is a synthesis of the discussions that took place during the course of the workshop, whether in plenary session or in the working groups. All the papers prepared for the workshop were presented or discussed during the meetings. However, since they were many in number, and the time available for their presentation was limited, the discussions had to be focussed on a restricted number of themes, and could not always reflect the full richness of information and views contained in the available written material. Moreover, some of the papers, while discussed in a given working group, in fact contained important ideas for reflection about another theme. In writing the present report, the author has made a systematic analysis of all the contributions, so that the following pages are based as much on the plenary session discussions and working group reports, as on the contents of the written documentation.[1] The diversity of economic, social, cultural and political situations in the countries of a given region, even an apparently quite homogeneous region, is such that it is sometimes difficult to generalize. Uncertainties persist and divergent opinions were expressed on key issues concerning funding strategies, the role of the private sector in management of education, and more generally the role of the State in education. However, the author attempts to report here the different views and opinions expressed during the workshop.

The structure of the report follows the organization of the workshop's deliberations quite closely. The first part traces the major trends in the economic and social situation, and analyses the way in which they influence the development of education and educational policy. The second part goes into greater depth on the four themes of education, which determine educational planning's scope of action, but also define the limits of its impact. The third part draws lessons from the practice of educational planning in different geographical, economic and political contexts, before suggesting a reorientation of this practice.

Main conclusions

Before going into the detail of the discussions, it is useful to briefly summarize some of the workshop's conclusions.

- In the present environment, marked by economic difficulties and technological uncertainty, education remains a topical issue everywhere, though the extent and gravity of the problems vary. Nevertheless, the issues of quality of education, preparation for employment, funding strategies and management are relevant to all contexts.

- In some countries, insufficient education coverage and inequality of access to education by regions, gender and social group are still the major problems, and educational planners must give high priority to these issues.

- Improving the quality of education is a universal preoccupation, albeit to different degrees. In the developing countries, the problem relates mainly to improving teaching conditions, especially in basic education. In developed countries, more attention is paid to achievements and to ways of ensuring a higher level of knowledge for all.

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[1] See Appendix for the list of documents presented at the Workshop.

Among measures to be taken to improve the quality of education, the distribution of teaching materials and other pedagogical equipment was considered an essential priority. The need to remotivate teaching staff was recognized, with all the possible consequences in terms of staff retraining and, in some cases, salary increases. Other suggestions were also made. However, it is evident that it is not enough to act on just one or two input variables; the issue of quality has to be approached globally.

Improving the quality of education is one of the necessary conditions of development. This requires new resources, but also better management of educational systems.

- Discussions on the education and employment relationship's theme showed that the concern about unemployment is shared widely by both developed and developing countries. However, the solution to this problem lies in a return to economic growth and in a more stable development process. In this respect, the experience of the newly industrialized countries underscores the importance of an educated and well trained labour force. For some, therefore the problem facing developing countries is perhaps not so much over-production and over-education — that is, a surplus of graduates with respect to the economy's absorption capacity — but rather under-education of a large part of the labour force and the insufficient quality of higher education. Under-education of the population severely hampers not only development and industrialization, but also improvement of productivity in rural areas and in the urban informal sector.

Under-education is also a concern in those countries where very rapid development of the services sector and of new technologies requires an ever higher level of manpower training. Apart from some highly specialized jobs, which are relatively few in number, what is needed is good general education, preferably with a scientific base, in order to allow for rapid adaptation at the place of work with frequent retraining, as well as new teaching methods that put more stress on peer-training, problem-solving and communication skills, etc.

- Improving the coverage of education and the quality of teaching requires, among other things, that funds available for education be increased. It is still possible, of course, to rationalize the use of existing resources, but in many countries the resources made available this way will not be sufficient. It is necessary to think in terms of either increasing the public expenditure devoted to education, or diversifying funding sources. There was no unanimity among the workshop participants on this point. Not all were convinced that public education budgets have reached a ceiling, if only because the level of taxation is still low in certain countries. Others took the opposite view, seeing a rise in costs shouldered by parents and students at the secondary and higher education levels as inevitable, for reasons of social equity and economic rationale. Neither was there a consensus on the advisability of privatizing the management of educational institutions. Some participants considered that such privatization would lead to higher quality, through greater competition, but there were others who feared that leaving the initiative to the private sector would result in an even greater deterioration of education in their countries.

- The implementation of policies, plans and programmes requires an improvement in the management and administration of education. Most of the suggestions advanced in this respect were centred on the concepts of decentralization, deconcentration, participation and institutional autonomy. Here again, differences of opinion emerged between those who considered that decentralization and community participation were necessary conditions for the improvement of management, and those who spoke out against excessive identification of such trends with democratization and greater efficiency. Everything depends on a country's economic, political and cultural context, as well as on the resources available at or transferred to the local level, and on the power structure at that level. Nevertheless, there was general agreement on the need to pay more attention to the schools themselves, where the pupils are and where learning takes place, and also to institutional management.

Finally, no genuine solution can be found for the modernization of administration and management without a review of recruitment procedures aimed at ensuring a higher level of staff professionalism, or without an improvement of administrators' working conditions and training.

- A majority of the participants called for reinforcement of the planning function. At a time when financial resources are scarce, when a growing number of institutions are providing training outside the public system, or even outside the formal system, and especially at a time when inequalities are flagrant and some educational systems are facing a serious crisis, organization and co-ordination are more necessary than ever before. It is up to the State to define policy, even if it then delegates implementation of this policy to other levels or institutions. However significant the private sector may be, and whatever the extent of delegation of authority to other levels, planning has a role to play in terms of orientation, regulation, evaluation and compensation. But it must also have the means with which to do it. Naturally, it is easier to guide, organize, regulate and compensate, when a country has not only a sufficient financial capacity, but also a good statistical data base and a long tradition of planning and administration. Therefore planning must start by building up the appropriate tools: a good information base, evaluation tools and the means for direct or indirect regulation through incentive measures and control of accreditation.

The necessary increase in the type and number of agents means that planning must change its methods and processes, by providing more room for consultation and mediation in the preparation of plans and programmes, and by paying more attention to the processes and the technical aspects of their implementation.

In an atmosphere of uncertainty, short-term planning, involving preparation of programmes and projects, is of very great importance. However, such activities must fit into a cohesive medium-term framework and into a process of reflection on the evolution of education in the longer term. For the margin of flexibility is reduced, and what is decided today determines what will happen tomorrow. Thus medium- and long-term planning must continue to play a role. Many participants pointed out the importance of defining educational projects that enjoy sufficiently broad support to go beyond possible changes in government. With this type of long-term project as a solid foundation, planning can be more flexible in its short-term management, and in dealing with the urgencies of the moment.

• Differences of opinion remain, especially between those who praise the virtues of the market and criticize the role of the State in education, and those, at the other extreme, who think that the State's rôle must be reinforced. Uncertainties persist as to the methods to be applied in different economic, social and political contexts. Reflection about the future of planning is not a closed subject. Various avenues of research come to mind, including the following:

- the importance of comparative analysis of educational planning systems;
- the need for theoretical reflection about the respective roles of public and private funding;
- studying ways of regulating educational systems, with an examination of incentive structures in particular;
- the priorities for action in educational planning and in basic education, but also in scientific and technical training;
- revitalization of the administration and improvement of the management of educational systems.

* * *

Part I

The economic and social context and its consequences for education

Two major factors have marked the world economic and social context in the last few years, and have had significant consequences for educational systems.

The first is the economic crisis that has now been raging for almost fifteen years, and has affected countries quite differently depending on the region or sub-region.

The second is the acceleration of technological change, which has occurred partly in response to the economic crisis. In order to escape the effects of this crisis, developed countries adopted strategies based on their capacity for innovation, increased their productivity, and developed new products and production processes, as well as new sources of energy and materials, to replace traditional raw materials. They are gradually moving from a manpower-based system to one based on knowledge and intelligence. As a result, the developing countries are losing their comparative advantages, which are related both to the low cost of their labour and to their abundant natural resources.

The slowdown in world economic growth and the strategies adopted by industrialized countries to deal with it have led to a profound economic crisis in many developing countries. Thus the situation has become critical in Africa and in Latin America, the regions that have suffered the most from the sharp decline in world prices of raw materials, and from erosion of the terms of trade. As a result, their balances of payments have deteriorated, their real national incomes declined and their States become poorer. Being heavily indebted, the countries of these regions were obliged, in order to meet the requirements of their creditors, to adopt stringent policies including, in particular, reductions in public expenditure and national consumption. These policies did not always yield the expected results. Exports were held back by the slowdown of world economic growth, by protectionist measures in industrialized countries, and by the drop in prices of primary products. Moreover, high worldwide interest rates added to the debt service burden, and greatly hampered the granting of new loans. All in all, the countries of Africa and Latin America have suffered a severe deterioration of their standard of living in the course of the eighties.

However, the unfavourable international economic situation did not affect all developing countries in the same manner. Several countries of East Asia, for instance, rapidly increased their industrial production and their exports, taking advantage, among other things, of substantial inflows of foreign capital attracted by the low cost and high quality of their labour force. Other Asian countries, in particular the two most populous countries in the world, namely China and India, accumulated a critical mass of technology and knowledge that is opening the door to a genuine process of development. Finally, many Asian countries increased their agricultural productivity. While the spectre of famine seems to be looming slightly less large, poverty in rural areas remains a considerable problem, as in urban areas.

In the industrialized countries with market economies, the slowdown in economic growth, triggered by the first and then the second oil shock, and the policies adopted by governments to fight inflation resulted in downward pressure on household demand and on investment. The net result, at least in Europe, was a steep rise in unemployment, a trend aggravated still further by restructuring connected with the introduction of new technologies. Polarization of the labour market is just as worrisome as unemployment. The creation of a certain number of high-income jobs was accompanied by a large amount of unstable, temporary or seasonal work, as well as jobs that are regular, but badly paid and not offering any prospect for further development. The young and those who have a low level of training are most affected by these poor conditions of employment.

Neither are the countries with centrally planned economies sheltered from the crisis, as shown by the examples of Poland, Hungary and Yugoslavia. Their circumstantial problems are aggravated by structural problems. In the Soviet Union, declining labour productivity, a growing technological gap with respect to other industrialized countries, and supply-side problems have encouraged that country's leaders to propose significant economic and political restructuring.

In short, the economic problems are severe in almost all countries. Their impact is all the more serious because they are accompanied by a crisis of solidarity and a political crisis. The economic crisis has sharpened competition between countries and among social groups: solidarity and co-operation have been relegated to the level of discourse. Inequalities are becoming more accentuated and this phenomenon seems to be associated with a loss in the State's credibility.

The consequences of this changed environment for education are numerous and take different forms. The workshop participants highlighted several trends, some of them negative and providing cause for concern, and others more positive.

The most direct consequence of the economic and social crisis is the reduction in public resources available for education. The real value of education budgets is stagnating or declining in many countries. Consequently, expenditure per pupil is falling, and this is particularly true of expenditure for teaching materials, building maintenance, etc. The financing of such items is being transferred more and more often to family budgets. Private education is expanding in countries where it traditionally played only a weak role. However, just as public resources have declined, so too have family incomes. Parents cannot take on the entire financial burden that was traditionally borne by the State. Thus we are witnessing:

- a deterioration of teaching conditions and a decline in the quality of education;

- a drop in school attendance in the most disadvantaged regions or among the least favoured social groups. In Africa, enrolment rates at the primary level have stagnated; in a number of countries they have fallen. In the rural and peripheral urban schools of Latin America, drop-out rates are extremely high. This disenchantment with schooling can be explained by economic factors: attending school is expensive, and despite the sometimes very great sacrifices made by families, it no longer guarantees a job which will provide a decent standard of living. This disenchantment can also be explained by cultural factors: the school that does not keep its promises is rejected as a foreign body.

- growing inequalities among regions and social groups in terms of access to and conditions of learning. In Latin America, the gap between poor quality mass education with an ill-adapted curriculum, and education for the élite has widened even more with the economic crisis. Elsewhere, regional disparities have been accentuated.

Apart from the supply differentiation described above, another consequence of the economic and social situation is diversification of the demand. Whereas the demand for primary education seems to be stabilizing or regressing, the social demand for secondary and higher education remains high, stimulated by the hiring practices of enterprises. Moreover, there has been a mushrooming of non-formal education programmes, as a direct result of the technological, economic and social changes that are occurring in our societies. An educational experience that is more flexible and more individualised than formal schooling seems to be required in order to meet an ever greater variety of needs. Various training programmes are cropping up here and there, organized by enterprises, by associations or by other institutions. In the industrialized countries, the supply is gradually becoming more and more varied, on the basis of different means of communication and technology, such as the mass media, computers and telecommunications. There has been an expansion of distance teaching in many developing countries and enrolments at open universities are increasing rapidly.

As another direct consequence of the economic crisis, the unemployment situation is worsening and is affecting graduates at ever higher levels. This makes it very tempting to reduce expenditure and/or public funds devoted to tertiary education. At the very time when some countries, discouraged by the unsatisfactory results, are reducing their expenditure on education, others, fully conscious of the technological stakes, are investing more and more money in the training of their citizens as part of their research and development efforts and to improve the quality of their labour force. In the industrialized countries, the policy of the State in this respect is being increasingly supported and implemented by the private sector, and in particular by enterprises that attach growing importance to investment in intelligence and knowledge.

In a context fraught with difficulties and rapid transformations, the administration of education absolutely must improve its performance; but in many countries one observes a bureaucratization of the State machinery, and declining effectiveness in administration of education. Educational planning is also losing ground to management of current affairs and short-term guidance. The challenges to be met are formidable indeed, and four deserve special attention: the financial constraints; improving the quality of teaching; improving the quality of educational management; and the new conditions of work and employment. These will be discussed at greater length in Part II.

* * *

Part II

The constraints and the challenges for educational planning

The education that planning is supposed to direct is in crisis in a large number of countries, and this crisis is evident in many different spheres. First of all, the public resources available for the expansion of education seem to have reached a ceiling. As a logical consequence of the financial crisis, but resulting also from uncontrolled growth in enrolments and from poor management of education systems generally, the teaching conditions and the teaching/learning process are deteriorating. Given the economic crisis, the educational system is producing qualifications which the labour market absorbs only partially. Finally, education administrations have transformed themselves into cumbersome bureaucratic machines that are difficult to control and orientate.

Most countries are striving to implement strategies to deal with these problems. Yet there is no universal and standard answer to the multiplicity of existing problems. Studies that have been carried out demonstrate that a uniform approach is impossible. Hence it is useful to examine the whole range of possible solutions, and to situate them within the context in which they were suggested.

I. The educational financing crisis

The evolution of the world's economic context has had severe consequences for the allocation of resources to education. Overall change in the effort to promote education shows a net downturn with respect to past trends: the absolute effort, which in J.C. Eicher's terminology is the proportion of education expenditure to GDP, has stabilized in most countries, and the relative effort, measured by the proportion of public expenditure on education to total public expenditure, has declined sharply in general. In the majority of developing countries, with the exception of Africa, education's share of the overall public budget is lower today than it was in 1976.

Causes and consequences of the financial crisis

The causes of the financial crisis are mainly to be found outside the educational system: the slowdown in GDP growth, sometimes to the point of regression in real terms, on the one hand, and the heavier burden of public debt servicing, on the other hand, have forced many countries to reduce their other expenditure in real terms, in particular their expenditure on education. However, the causes of the financial crisis can also be found within the educational system, which exhibits a certain long-term trend of rising unit costs, especially when enrolment growth slows down.

The slower growth or even decrease in public funds devoted to education contrasts with an education demand that has remained high, fed by demographic growth that is still strong. In order to accommodate an ever greater number of children, countries have had to make adjustments. These adjustments have often been made to the detriment of the quality of teaching, of equalization of opportunities and of the objective of universal education.

The adjustments that have occurred have affected resource allocation by level of education and by type of expenditure.

An analysis of the data on resource allocation by level shows that the changes have varied slightly for different groups of countries. Primary education's share tends to decline everywhere. In Africa and in Latin America, this decline took place to the advantage of higher education; in Asia, it took place to the advantage of both secondary and higher education.

If one does the analysis by type of expenditure, it becomes clear that the first types to have been reduced are capital expenditure and current non-salary expenditure, especially outlays for teaching materials. The next in line were hiring freezes, non-replacement of retiring staff or not re-hiring non-permanent staff. Although salary expenditure is generally inflexible, it was nevertheless reduced subtly by keeping nominal salaries constant and by freezing salary rises for seniority. Because of inflation, such freezes in fact amounted to a decline of real salaries, and a reduction in the purchasing power of teaching and non-teaching staff. This situation sometimes resulted in a strengthening of the struggle for higher salaries, but above all in an undermining of the motivation of teachers and administrative staff, which had adverse effects on the quality of teaching and on the management of the system. In order to compensate for the insufficiency of public resources, families, local communities and external aid were called upon. Expenses borne by families have in fact risen at all levels of education. Paid private education has developed in a large number of countries in Africa and Asia. In Latin America, on the other hand, under pressures from a middle class unable to shoulder the cost of schooling, the tendency was rather to reduce the share of private education and to increase that of public education.

Many countries have become quite dependent on external aid, which, in some African countries for example, actually finances most capital expenditure beyond primary education, and even a rising proportion of the current expenditure.

Strategies to be implemented

It is relatively easy to make the diagnosis, even though the data are not always sufficient or appropriate, especially as far as expenditure by families, enterprises and local communities is concerned. But the discussion centred mainly on financing strategies to be implemented, and on options for dealing with the crisis. These strategies can be broken down into three major categories: those that affect the allocation of public resources, those that aim to improve the utilization of existing resources, and finally those that seek to diversify funding sources and to acquire new resources.

As far as allocation of public resources is concerned, several participants stressed that it would be incorrect and even dangerous to claim that a ceiling has been reached and is now difficult to exceed. Comparative data do in fact indicate that there are considerable differences from country to country in both absolute and relative efforts in favour of education. This means that different choices have been made in different countries, and it is not unreasonable to question these choices. Variations in the relative size of the tax burden (the proportion of public expenditure to GDP) were also stressed. Here too there is a margin of manoeuvre, and the possibility of increasing resources through tax reform and by combatting tax evasion should not be completely set aside. Without rejecting, as did some participants, the idea that one can advance purely economic arguments to justify an optimal level of resources to be allocated to education, a majority of the working group participants nevertheless felt that the decision about public education expenditure is a political decision that must be left to the political authorities. It is not the role of planners to say how much should be spent, but rather to enlighten the decision-makers as to the possible consequences of different options.

There was general agreement on the need to improve the effectiveness of management of existing resources. This is a question both of better utilization of available human and physical resources, and of improving the cost/effectiveness ratio. There are reasons to believe that substantial savings could be made in this way. There has in fact been flagrant under-utilization of resources, especially teachers, in many countries for a number of years, and this has been accentuated by the crisis. Given that salary expenditure accounts for the greatest share of education budgets, any measure aimed at rationalizing staff utilization would necessarily result in definite savings. One can envisage some specific measures that could bring unit costs down without undermining quality (for example, increasing class size, encouraging multi-grade teaching, training multi-subject teachers, producing textbooks locally, etc.). Other measures could improve the effectiveness of teaching without (substantially) raising costs (for example, increasing the length of the school year and the time provided for instruction).

New information technologies and mass media offer interesting prospects, both in pedagogical terms and for providing education to disadvantaged groups. However, the experience of European countries shows that multi-media approaches, as adopted by them, can be fairly costly. Possible economies of scale turn out to be low in practice, because of the necessary diversification of the teaching programmes offered. For developing countries, better prospects are offered by less recent innovations, such as educational radio.

Regarding the opportunities for diversifying funding sources, many participants felt that they were rather limited in developing countries at the present time.

Productive activities within teaching establishments are not a panacea in any event. Countries that have applied this formula on a large scale have had rather mitigated results, and, without denying the other results, in particular pedagogical, of these experiences, revenue generated by productive activities has generally been fairly low. Contractual arrangements between universities and enterprises have been considered more desirable. But it is necessary to proceed with caution "in order not to transform universities into grocery shopsù. More funding of technical and professional training by enterprises was also recommended.

The discussion bore mainly on the nature and the scope of the role of the State, and on the possibility of transferring financial responsibility to the private sector. It is necessary to separate the issue of cost recovery (privatization of financing) from that of privatization of management. For some participants, privatization of management, on the one hand, and cost recovery, on the other, constitute indispensable components for restoring economic rationality. Competition between public and private schools, and the transfer of part of the costs to families, are necessary to make institutions more accountable for their results, and to improve the quality of teaching. Moreover, cost recovery would make it possible to ration access to postobligatory studies and to achieve more effective use of resources.

A different position is the one that proposes concentrating the State's involvement on the most disadvantaged categories, with a view to promoting equity. In this way, total or partial cost recovery in secondary and higher education becomes a means for vertical reduction of inequalities. The point is to release additional resources to allow for expansion and improvement of the quality of basic education, especially for the benefit of hitherto excluded groups. A distinction between basic education as a public service, and post-compulsory education as a private service, to be developed with private funds, was proposed. Finally, there were participants who stressed the need to reconcile democratization of education with the objective of national technological independence. Even though the highest priority must be given to improving the coverage of basic education, countries must be in a position to pay for certain types of high-quality post-secondary training with public money.

No consensus was reached as to what might constitute optimum funding strategies. It was agreed that the time has come to abandon certain preconceptions as to the beneficial and egalitarian nature of free education, especially higher education. However, introduction of or increases in tuition fees should not be to the detriment of equalization of opportunities and should be done progressively.

Neither was private education put forward as the miracle solution to the problems of a dearth of public resources. Whereas private education has managed, in some cases, to exhibit dynamism, adaptability and a spirit of innovation, reference was made to numerous examples of private schools of very poor quality, in Africa especially, but also in Latin America and Asia. In addition, while it is true that the development of private education in some countries did in fact free resources for strengthening the public sector (the case of Japan), other examples were given where the same development resulted in the élite becoming disinterested in public schools, thus accelerating the deterioration of the public education system (for example, in Latin America).

These differences of opinion show clearly that, when defining funding strategies, it is necessary to take into consideration the economic, political, social, educational and cultural context, and to specify the margin of manoeuvre available to the country in question.

II. The quality of education

The quality of education is a major concern of those responsible for educational policy in many countries. This concern is shared by pupils, by their parents, by teachers and even by employers who complain about the inadequate level of the manpower they recruit. An impressive number of the documents prepared for the workshop stress the need to improve quality. Even more striking is the large number of reports, speeches and books deploring the decline in academic standards. This decline is very often attributed to the extremely rapid growth of enrolment that occurred after the years 1950-1960, and to the fact that many countries went in for mass education without really changing teaching methods and curricula. Thus, the concern about the quality of education is not something new. However, it has been accentuated with the economic crisis, which has caused a deterioration of teaching conditions.

But there is no precise or universal definition of quality. It is linked with a number of factors, such as a mentally stimulating environment in the intellectual sense supported by minimum standards of learning conditions, teaching materials and teachers who succeed in stimulating the pupils' involvement and interest, and assist them in achieving new point of understanding whether that be cognitive, affective or psychomotor. While it is easy for an experienced educator to immediately recognize high-quality teaching, defining precisely what it amounts to turns out to be very difficult. In practice, the quality of education is often measured by the teaching conditions (the inputs), and much more rarely by the outcomes of learning.

The established facts

What is established is that there has been a deterioration in the conditions of learning in a large number of developing countries, especially (but not only) in the poorest countries, a phenomenon due, among other factors, to changes in the material conditions of teachers. Just like other civil servants, they have seen their real salaries decline. They have made up the difference by diversifying their activities, and this has had a negative impact on the educational process: they are absent more and more frequently, they do not prepare their lessons as much, they no longer set homework or they do not correct it. Moreover, they do not have as much pedagogical guidance, be it from school principals or from educational supervisors. Finally, there is a shortage of textbooks, both for the teachers and for the pupils. Neither do the pupils have enough exercise books or writing slates to practise and do their exercises. As for teaching curricula, many countries have instituted reforms aimed at promoting a cultural identity, or the use of national or local languages. These reforms have often failed to achieve their goals, running into resistance from élite groups and teachers, among others. As designed at present, curricula are often inadequate, for they do not reflect an important part of the country's cultural heritage, and neither do they provide for the accelerated renewal of scientific and technical knowledge. As a last point, teaching methods have remained unchanged, whereas a different pedagogical approach should have been developed, taking into consideration the psychology of the culture of the child with his values and his traditional lifestyle.

The situation is no better in higher education than in basic education. Several authors mentioned the deterioration of learning conditions in technical schools and in universities, especially in Africa.

The consequences of this deterioration in learning outcomes at all levels are much less well known. It is established that school drop-out rates have risen in the rural or peripheral urban areas of a number of countries. On the other hand, data about the achievement levels of pupils are very rare in developing countries. There is no time series that would make it possible to verify whether academic standards have in fact dropped. There are some indications that, at the end of their basic schooling, a significant number of pupils do not know how to read properly, or do not have a good mastery of the language in which they were taught. Moreover, comparative international studies show that the results achieved by pupils in developing countries are considerably lower than the average results in the OECD countries. More research needs to be conducted at the national level to measure these phenomena with greater precision.

Further research needs to be carried out in order to provide a better understanding of how the learning process takes place. How are pupils learning? Do they learn co-operatively or competitively? By memorizing? By understanding? By applying? How is their interest stimulated? To what extent does the search for certification dominate teaching and learning styles?

Investigations are not enough, and measures must be adopted without further delay. What are the measures most likely to improve quality, without putting too much of a strain on education budgets?

The measures to be taken

Numerous studies have shown that distributing school textbooks in sufficient numbers to teachers and pupils is effective and relatively low cost. This is also an area in which external aid can usefully become involved. However, this raises the issues of textbook content, preparation, place of production and distribution. Other pedagogical materials must also be made available to schools. The advisability of defining packages of "inputs" necessary for minimum levels of quality learning under different financial constraints was debated, but no concrete proposals were advanced. Is it possible to define such "packages" of measures, independently of the cultural, economic and social context? There was disagreement on this point between those who feel that one can draw general conclusions applicable to all countries, and those who take the opposite view, insisting that the definition of quality, the identification of the determinants of learning outcomes, and hence of measures to be taken to improve quality, cannot be dissociated from the context in which the learning takes place, and where decisions regarding action priorities are taken.

Apart from this difference in opinions, the general impression was that it is not sufficient to act on one variable alone. The issue of quality must be approached globally.

Several participants stressed the key role played by teachers, and the need to re-mobilize them. This involves a whole series of measures, ranging from paying them higher salaries to the organization of retraining courses, from better pedagogical guidance to more accessible training and career enhancement opportunities. Increasing salaries is an absolute necessity in certain countries, even though some participants felt that it should be tied to teacher performance in one way or another.

Many other suggestions for improving quality were made: increasing the actual instruction time and lengthening the school year, updating curricula to incorporate aspects of scientific culture, diversifying programmes and teaching methods according to the clientele. There was general agreement on the need to attach greater importance to what happens at the level of the school. For instance, the role of school principals was stressed since quality depends not only on access to funding, but also on the mode of educational management and administration.

Finally, two specific recommendations were made: to improve the information base and extend the identification of the actors involved in educational planning. Every nation must have a mechanism for assessing the "health" of its educational system. Therefore it is necessary to collect information about the educational process itself, about the teaching conditions that influence this process, and about its learning outcomes, to be measured by examination scores but also by criterion-referenced tests. Once collected, the information must be processed in different ways, according to the needs and interests of the individuals and administrative levels concerned. This approach gives rise to the issue of planners in the educational process. Various levels were identified, ranging from the pupil and his/her parents to teachers, school principals, district and regional officers, and right up to the national planner, and even the international planner. Horizontally, one has to include agents from other sectors affected by the educational process and its results. Institutional planning is of critical importance to the quality-improvement process. The situation will not really get better until the local agents take their own planning in hand, and plan their own actions, acting rather than reacting.

III. Changes in the world of work

For several years now, the relationship between education and employment has revolved around three major axes:

- worsening unemployment, under-employment of graduates and the problem of over-education;
- the simultaneous problem of under-education of a significant proportion of the labour force;
- the impact of technological change on employment structures and on skills required.

Graduate unemployment and over-education

Graduate unemployment, and youth unemployment more generally, is a problem that preoccupies the governments of many countries. It is a result of the productive sector's inability to absorb all the new entrants on the labour market. In many developing countries as a consequence of the economic crisis and of high productivity gains, achieved through enterprises' modernization strategies, full employment has become only a remote ideal. In developing countries the civil service is no longer in a position to play its traditional role of recruiter of higher education graduates, because of austerity policies.

Graduate unemployment may be connected with poor student guidance and with sectoral imbalances. Educational systems produce many more highly-qualified graduates for the tertiary sector (lawyers, administrators, literature specialists) than their countries need, when there is a serious lack of high-level scientists, managers, technicians and highly specialized workers. However, there are some Asian countries, and more recently African ones as well, where there is general over-production of graduates, and where unemployment is affecting even the scientific and technical professions.

Under-employment of graduates is as much a matter for concern as outright unemployment. In a job market that is stagnant or growing only very slowly, higher education graduates take positions previously filled by secondary education graduates, who themselves displace primary-school leavers. Although this is an oversimplification, nevertheless the phenomenon does devalue degrees, and enterprises are insisting on ever higher levels of education in their selection processes. Access to higher education is no longer a means of attaining enviable employment at the top of the hierarchy, but just a way of avoiding unemployment.

This phenomenon can be observed in both developing and developed countries. Various graduate unemployment is not a new phenomenon but it has become worse in certain countries. For example, the studies cited in Sri Lanka and India show that a large number of graduates in arts-based disciplines—in science as well—work in positions which require only secondary education.

The term "over-education" been used to describe the situation in the United States, where close to one half of college graduates are employed in positions that do not, in principle, require this level of qualification. In the Soviet Union where post-secondary studies grew much more rapidly than was justified by the evolution of the employment structure; there is an abundance of university graduates, but the economy is suffering from a shortage of middle-level manpower. One arrives at a paradoxical situation where higher education graduates accept to take up blue-collar jobs in order to receive a salary two or three times higher than the ones they would get as an engineer, a doctor or a lawyer.

Given graduate unemployment, devaluation of educational qualifications and over-education, people are talking about over-investment in education, and suggesting that the expansion of higher education be halted. Would it not be better to invest public money elsewhere? The question is being posed all the more seriously in that some countries are experiencing a severe financial crisis. It was also recalled that when graduates are actually employed below their abilities, there can be a negative influence on their participation (absenteeism rises) and their level of productivity. Several authors suggested restricting access to higher education and raising its quality. Others were less certain that its size should be reduced, and instead suggested that it be financed from private funds. Some participants challenged the very concept of over-education or over-investment in education. In their view, there is no such thing as too much education, because a high level of training of the labour force is necessary to promote more democratic organization of work, to encourage the development of a local scientific and technological capacity, to stimulate the entrepreneurial spirit at a high level, and to provide for more enlightened participation by all in political life. They see things more in terms of lack of relevance of education, which does not develop the required attitudes or qualifications, or of under-utilization of graduates, which is more an economic problem than an educational one.

The solution to the problem of graduate unemployment and over-education does not, in fact, rest solely with educational strategies or funding strategies. It is also to be found in economic growth, on the one hand, and in the world of employment, in industrial strategies and in the organization of work, on the other. In the developed countries, the gradual transition from Taylorian forms of work organization to more participatory forms, from long production runs to shorter production runs and customized production, a development made possible by the use of new production technologies, should, at the same time, be facilitated by the relatively high educational attainment of their work force, permit ever stronger growth of the economy, and solve the problem of over-education and graduate under-utilization. In the developing countries, the solution to the unemployment problem lies in renewed growth. According to some participants, a technological policy aimed at endogenous development that promotes local production of technologies is also required. In all cases, attention must be given to improving the quality of the labour force.

Under-education of the labour force

Within the same society, over-education can coexist with a problem of under-education of a significant part of the labour force. Under-education was defined as a situation in which members of the labour force do not have the educational qualification, experience and skills to qualify for entry-level jobs, or to benefit from training that could improve their employability. This is a common problem in developing countries, but it is also a problem in industrialized countries, albeit to different degrees and for different reasons. For instance, in the United States one in three primary pupils is considered to be educationally "at risk" and this at the very time when, with the development of the tertiary sector, the employment market is demanding more and more the skills that are learned in schools: literacy, numeracy, good communication skills, reasoning, etc.).

Upward mobility is also putting a premium on the ability to learn new skills. This growing distortion between the inadequate qualification of part of the labour force and rising skill levels required in jobs, constitutes a challenge for employers.

The problem of under-education in developing countries is essentially that of the illiteracy of a substantial proportion of the population, a consequence of the poor coverage and the relative ineffectiveness of the educational system. The net result is a labour force without technological qualifications or skills, and with, moreover, limited opportunity for participation as citizens of a modern society.

The expansion of the informal sector in developing countries, as in fact the growth of unstable and under-paid employment in developed countries, is not a result, of course, of the under-education of workers. However, it is known that their level of training is very low, and one of the most difficult questions at present is how to improve their productivity and their working conditions. Formal education is no doubt not the most appropriate environment for developing an entrepreneurial spirit and a yen for risk. Nevertheless, several studies have shown that small-scale businessmen who have received some education and professional training tend to earn higher revenues. At the present time, in Africa and Latin America one finds increasingly larger numbers of higher education graduates who, having failed to find a job in the modern sector, are opening their own businesses, and sometimes with State-help. Some of them even create enterprises in high technology sectors. It would be interesting to investigate the scope of this phenomenon.

The impact of technological change

Two hypotheses are commonly advanced regarding the impact of technological change on the structure of employment and skills requirements of jobs. The first, that technological change is causing a bi-polarization of jobs and qualifications between a growing but limited number of highly qualified individuals (scientists, engineers, technologists, technicians) and the rest of the labour force, who will be forced to engage in tasks requiring little qualification in very specialized jobs, and will therefore be de-skilled. The second hypothesis is that the level of skills of the working population must be raised substantially, in order to make it possible for our societies to enter the information age.

International research and comparisons in the field of qualifications are hampered by the heterogeneity of measurement tools and employment nomenclatures. In fact, the skills, attitudes and qualifications required, and the way they evolve, can only be assessed by research that is ethnographic in nature, involving very detailed observation and analysis of the tasks carried out.

The debate on the bi-polarization of jobs and skills required, based essentially on the results of research conducted in the United States, did not make it possible to reach any conclusion. On the one hand, the hypothesis of de-skilling of jobs does not seem to have been confirmed. The skill requirements of some jobs have been raised while others have been lowered. All in all, the content of jobs and the type of skills required have been modified with the introduction of new technologies, but it is not possible to affirm whether the new skills are higher or lower than those required previously. Indeed, everything depends on how work is organized, as was pointed out above.

On the other hand, it has been observed that the United States is experiencing a mushrooming of very poorly paid and very low-skilled jobs, mainly in the services sector. To what extent is this proliferation of underpaid jobs the result of technological change, which made a substantial amount of manpower available? To what extent is it the result of the economic crisis, which caused, at least in the United States, a considerable drop in wages, and encouraged enterprises to take advantage of inexpensive labour? The debate remains open. As has been shown by various studies in other developed or newly industrialized countries, it is not certain that the manpower liberated by new technologies was sufficiently qualified manpower to begin with.

Does this mean that it is necessary to significantly raise the educational level of the labour force in order to use new technologies? The statement is probably exaggerated, at least in the developed countries. No training of long duration is required to learn how to use a micro-computer or even at a stretch a numerically controlled machine tool (MCMT). In fact, the more sophisticated the hardware and the software, the easier it is to use them. While it is not necessary to have had extensive technical training, it is nevertheless important that the personnel concerned should have a good educational foundation, that they be enthusiastic and interested, have reading and communication skills, and an ability to understand quickly. The conclusions to be drawn for the educational system are as follows: (i) improve the quality of general education; (ii) adopt new teaching methods with the accent on co-operative methods, peer-teaching, problem-solving, etc.; (iii) expand opportunities for lifelong education and retraining. It is better to educate men and women who are able to adapt, rather than specialists whose technical knowledge runs the risk of becoming outdated very quickly. Neither is it just a question of distributing more diplomas; above all, the capacity for assimilation and cultural absorption of an entire generation must be raised.

General education does not necessarily mean academic education. For a country to be able to invent, to create and to adapt new knowledge, it must develop good scientific and technological teaching at all levels, as well as a research and development infrastructure. This is the challenge that must be met not only by developed countries, but also by developing countries. The latter must also enhance their traditional scientific heritage. It is only when modern techniques become integrated in the local context and with the traditional technological heritage that they will be able to contribute to the development of the poorest countries.

IV. Administration and management of education

The importance of the management function has already been stressed several times in this report. The financial crisis necessitates redeployment of available resources, and better management of these same resources by administrative units. The quality of education also requires improvements in the administration of educational systems in general, and individual institutions in particular. And yet there are not many countries that are satisfied with their administration. It is often viewed as a cumbersome and authoritarian machine, blocking initiative and unable to change, more involved in its own problems or internal conflicts than in its mission. In practice, one often observes poor execution of plans, reforms and projects, and serious shortcomings in the management of educational systems as a whole. The most elementary tasks, such as collection of reliable data, distribution of materials, or payment of staff on time, are not always accomplished. Educational planning cannot close its eyes to the practical conditions of the implementation of its plans, programmes and projects. Therefore solutions must be found. The ones advanced most frequently are based on the concepts of decentralization and deconcentration, autonomy of institutional management and community participation.

In search of solutions: structural changes

The bureaucratic structure, characterized by a high degree of centralization, stratification and separation of functions, is considered to be the main source of the administration's rigidity and slowness, and also of its lack of commitment to the educational sector's requirements. Any proposal along the lines of greater decentralization or deconcentration is therefore considered to be an improvement of the situation. However, a number of participants spoke out against excessive identification of decentralization with democratization and/or participation. The experience of Latin America shows, in fact, that decentralization of the administration can be promoted by authoritarian political regimes that deny all forms of participation; conversely, democratization and participation can have a genuine presence within centralized administrative systems.

The ultimate form of decentralization is privatization of the management of institutions. But according to many participants in the workshop, there is no absolute proof that private management of education is more efficient in terms of resource utilization, or more effective in terms of quality of the learning function, than public management. The same is true of decentralization. Some participants maintained that there is no proof that it is more efficient or more effective than centralized management, or that it meets real aspirations in countries where the political culture values centralization, and within structures that do not provide provinces and municipalities with adequate fiscal autonomy. Moreover, in a period of economic crisis, decentralization can amount to aggravating disparities among regions, because of their different levels of resources. Disparities are often more pronounced in countries with decentralized or mixed financing, than in countries with centralized financing.

In fact, it all depends on the given country's political, administrative, economic and cultural context. In some cases, centralization corresponds to a situation in which newly independent States want to provide for building a national identity. Education is then a powerful tool for promoting national unity and development. In other cases, the practices of decentralized management are deeply rooted in the administrative and political tradition (the Anglo-Saxon model). Each country has a unique system of relations and functions, characterized in a variable way by a mix of centralization, decentralization, concentration and institutional autonomy, which must be taken into consideration.

In the debate on centralization versus decentralization, it is important to distinguish carefully between the definition of educational policy and its practical implementation. It seemed to be thought appropriate to entrust the central level with the responsibility for determining educational policy and programmes, adopting measures to correct inequalities, and issuing common general directives. As for the implementation of these objectives, it can be delegated, in order to allow, for example, for partial adaptation of the programmes to specific regional needs, and for more autonomous management of institutions. It should not be a matter of simply stripping central power away, but rather one of creating a new system of more functional and equitable relations between the centre and the periphery. One must avoid decentralization that decentralizes problems, while centralizing prerogatives.

Institutional autonomy and participation by the community are the other solutions frequently advanced. This is because educational institutions are reproached for not having a sense of responsibility for their results. While administrators are generally held accountable for the utilization of the resources they receive, that is, they have obligations with respect to means, only very rarely do they have obligations with respect to results. Whenever there is a disagreement or a difficulty, everyone tends to shift the responsibility to someone else. This lack of identification of responsibilities contributes substantially to ineffectiveness. Greater institutional autonomy should encourage administrators and directors of institutions to feel concerned about educational results, to better deploy their available human and financial resources, and to seek other resources at the community level.

Participation in management by a greater number of those involved — teachers, pupils' parents and the pupils themselves — should also allow for democratization of the decision-making process. It is not always easy to organise parent participation, as this often suffers from being associated with a request for supplementary financing, especially in primary education. Parents then hesitate to participate or even become disinterested in the absence of genuine power-sharing that draws on their individual abilities.

Finally, there are certain contexts in which, given the existing division of power at the local level, participation is seen by some to be nothing more than pseudo-participation. Far from promoting a collective decision-making process, it simply legitimates decisions taken by local landlords or by lobbies. Once again, it is necessary to take into consideration each country's political, economic and cultural context.

Conditions for improving the administrative capacity

Whatever structure is adopted, improving the administrative capacity depends on a number of factors, including the available resources and the level of training of officers.

The administration and management of education can hardly be improved or modernized if some minimum amount of resources is not allocated to the system and its officers. Below a certain remuneration threshold, administrative officers, just like teachers, are forced to seek out other activities, as a simple matter of survival. If the means are not available for travel, supervisors cannot fulfill their pedagogical guidance role. They stop verifying whether teachers are present, and whether the quality of collected statistical data is satisfactory. On the other hand, one must avoid useless expenditure, such as unduly increasing the levels of management, and hence the need for qualified staff, when a structural reform is carried out.

Better selection and training of administrative officers, school principals, supervisors and administrators are, of course, essential.

Professionalism of the administration is undermined by the unsatisfactory procedure for selecting its agents. Whereas specific aptitudes are required, these officers are often just ex-teachers, promoted by seniority. Initial and in-service training is also a key factor in modernization of management. It pertains to several categories of agents, from professional administrators through to teachers and any other individuals likely to be involved in a participatory administrative process. The training of school principals deserves particular attention. They should be trained both as leaders capable of motivating an educational community, and managers able to apply a whole range of administrative and financial techniques.

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Part III

The prospects for educational planning

In this changing economic and social context (Part I), given the new constraints and also the new demands of societies and population groups (see Part II), it would seem that educational planning no longer occupies the central position it held in the sixties.

This loss of prestige is not a phenomenon specific to educational planning, for it pertains to all planning methods and processes. Neither is it limited to a particular type of State, or to developing countries. Industrialised countries that had a tradition of "indicative" planning are now moving towards strategic and contractual rather than programme-oriented or normative planning. In countries where central economic planning is practised, the inertia and the unwieldiness of the bureaucracy are forcing profound reforms of the planning process.

Given the universality of educational problems — even if they are not always the same — and the extent of the challenges to be met, all societies are concerned in one way or another and this calls for an analysis of the practice of educational planning, of its successes and its limitations. These factors are also stimulating reflection about the future of educational planning, which must take better account of both the constraints and accelerated changes occurring in all contemporary societies.

The practice of educational planning

A number of national case studies were presented and discussed in the course of the workshop, but it is not possible to review them here. These studies, together with the individual working group discussions, clearly show that planning does not mean the same thing in all countries.

In developing countries, the expansion of educational systems was often accompanied by the establishment of planning structures, which were gradually entrusted to qualified directors and staff. These structures were one of the favoured environments for the elaboration of plans, programmes and projects of Ministries of Education. The very nature of their work contributed to turning these bodies into specific centres for the elaboration and development of statistical data bases on education. In many cases, they also served as relay stations for the management of external aid and international co-operation.

Beyond these positive aspects, the importance of which must not be under-estimated, criticism of both a methodological and a structural nature has been levelled at educational planning.

Among the main types of methodological criticism, the following are frequently underscored:

- The excessive trust placed, in the course of the sixties, in forecasting methods, with a virtually unrestricted belief in the possibility of reducing uncertainties through ever greater sophistication of models. In actual practice, the predictive power of such work turned out to be less than hoped for, in particular because of the scope and the speed of the changes that affected all aspects of economic and social life starting in the second half of the seventies. The inherent limitations of planning tasks were under-estimated all the more because, consciously or otherwise, confidence in durable economic growth made it possible to hope that such growth would provide solutions to all problems. There are those who even reproach planning for not having been able to identify the early signs of the crisis, and for not having alerted decision-makers on time as to future difficulties as regards financing or graduate employment.

- Abusive reliance on theoretical constructions, sometimes to the detriment of acquiring more detailed knowledge about the actual conditions of evolution and change of educational and social processes.

- Insufficiency of experimentation phases before the launching of a project, and absence of subsequent evaluation.

From a more structural viewpoint, planning is reproached for not having been sufficiently involved in the implementation of its plans and programmes, and for not having become integrated in the administration of education. The separation of theoretical forecasting activities, entrusted to the planner, from implementation and monitoring activities connected with the execution of projects and plans, entrusted — when they exist — to other categories of specialists, is a methodological problem that the planner would not or could not overcome, given the existing power structure. In addition, planning is criticized for its routine management and its bureaucratic procedures, which disconnect it from concrete educational problems. The processes of regionalization and deconcentration/decentralization are occurring very slowly. In some countries, more flexible structures had to be established, either to manage projects involving international co-operation, or to support the administration with research, information and consultancy services.

However, the errors made cannot all be laid at educational planning's doorstep — far from it. They are connected with the small margin of manoeuvre available to national economies and educational policies. They are also connected with the inherently political nature of most of the decisions taken in the field of education. Whatever the forecasts and intentions of planners may have been, in many countries the expansion of education was tied more closely to the political and ideological system than to the productive system. In Latin America, for example, several authors claim that the main aim was to meet the aspirations of the middle and upper classes for more education. In Hungary and in Poland, post-secondary education also expanded more rapidly than was suggested by planning studies. Not to mention the frequent political changes affecting Ministries of Education in many countries.

These remarks lead us to a last criticism that is sometimes addressed to educational planning, and which has to do with its marginalization in the decision-making process. Imprisoned by their theoretical and technical framework, planners have not always managed to integrate their planning in an overall political project, nor to take into consideration the political variables that influence decision-making in the final analysis. Plans prepared this way ended up not being executed. In other cases, political options were adopted independently of any reflection about the medium- and long-term consequences of selected actions, with planning's role being limited to accepting the decisions as adopted or justifying them a *posteriori*.

Whatever the methodological or practical shortcomings, the institutional limitations or organizational inadequacies that are imputable to planning structures, they have gradually developed an undeniable "know how" that can be used, in the present context, to lay the foundation for a redefinition of educational planning in the light of past lessons.

Towards a redefinition of educational planning — the role of strategic planning

Given the criticism that is levelled at educational planning, some may view it as a pointless exercise, and recommend that regulation of enrolment growth be left to social demand and to the market. Others may propose engaging in the exercise solely on the basis of decentralization, participation and negotiation, given the absence of adequate technical tools for guiding decision-making.

This questioning of educational planning in fact reflects a much more general debate on the role of the State in society. In this respect, there is a range of divergent analyses, from essentially liberal or neo-liberal criticism that denounces the inefficiency of excessive State intervention with respect to market regulation, to the opposite stand, calling for the existence of a strong central State in order to limit educational disparities among regions and social groups. The former view postulates the existence of an education market — even though there may be inherent limits to the identification of education with consumer goods — having a freedom of action that would make it possible to better meet the demand for education, at least in quali-

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tative terms. The latter, contrary view stresses the State's strategic role in the determination of policy, on the one hand, and in the implementation of mechanisms for regulating education distribution, on the other.

All in all, the participants felt that education plays too important a role in society and development, that its stakes are too political and its resources too limited, for the State not to try to shape its development. Moreover, given that the States of many developing countries are vulnerable in economic, financial and even political terms (see Part I), a number of participants expressed the wish to see them strengthened, in order that they be in a position to play their role of co-ordination, regulation and correction of social and economic inequalities.

The four working groups on Asia, Latin America, and French-speaking and English-speaking Africa stressed that educational planning is indispensable as never before, in order to set out basic directions, to establish a consistent framework, to promote better use of resources, to define the funding strategy, and to ensure equalization of opportunities. It has already evolved with respect to the theoretical model developed in the sixties; it must continue to do so, in order to adapt to a world characterized by uncertainty, accelerated change and complexity:

- financial uncertainty in the first place: the present austerity is not a passing phenomenon, and one can expect it to last; nevertheless, it introduces a high degree of instability into the planning process;

- accelerated change in the scientific and technical world, and uncertainty as to the evolution and the composition of the labour market;

- complexity of phenomena: the diversification of education and of the range of those operating in this domain is a source of complexity for planning. The time is past when Ministries of Education had a monopoly on education and training. Private education has expanded. Many other Ministries are involved in training as well. Taking a broader view of the development of human resources, it is necessary, to co-ordinate educational activities with those of other government agencies in the fields of health and agriculture. Finally, one must take into account the fact that today's enterprises sometimes have very large training budgets, and that radio and television can be used to meet very specific needs.

In the face of these uncertainties and this complexity, the margin for manoeuvre is narrow: the requirements of the population are substantial, and those of development critical. It is urgent for planning to rethink its structures, its functions and its process.

In this respect, it may be useful to examine the way in which the most effective enterprises have managed successfully to adapt to their environment, which is also characterized by complexity, uncertainty and accelerated change. In order to orient their behaviour in the long term, and to provide a framework for their operational plans, these enterprises have developed their tools and updated their techniques around new concepts such as strategic planning, strategic management and the management of change. They are in fact striving to develop a global vision of the future, to introduce substantial flexibility of reaction in the short term, and to encourage their staff to become involved in and motivated for a given project. The strategic spirit requires a number of pre-conditions: freedom of choice, effective or potential competition among establishments, the presence of incentives and sanctions. The competition to which enterprises are exposed can be identified only partially with the situation of a large number of public education systems, for the primary objective of industrial and commercial enterprises (making a profit) is not comparable with the goals of educational institutions, especially the public ones; so the parallel has its limitations, and yet it may be possible to draw some lessons for educational planning from this strategic approach.

First of all, the functions and the products of educational planning must be diversified. The four regional working groups recalled that in an unstable economic situation, short-term management is fundamental, but that it must be integrated in a broader vision of what education should be in the future. It is a matter of exploring the probable trends according to different scenarios. Thus, planning is conceived as a tool for orienting decisions towards solutions that would make the transition from present to future more flexible and less chaotic. Whether it be termed strategic planning, "strategic guidance", or quite simply a "strategic spirit", the essential point remains the same, namely the search for a grasp of the future through an understanding of the present: it is a matter of being attentive to "facts that presage the future" and "weak signals", in order to be able to reorient educational policy before it is too late. Several participants also stressed the importance of developing a collective educational project, that would be accepted by national consensus, and towards which all short- and medium-term actions would tend.

However, planning does not stop there. Given the uncertainty of the present context, traditional medium-term planning is perhaps losing its importance. Some participants spoke of a rolling plan or of mobile objectives, in order to highlight the need for flexibility of medium-term objectives. In a period of scarce resources, it is short-term planning and planning of programmes and projects with very specific objectives that carry the day. It is a matter, for instance, of improving teaching conditions, and of ensuring the production and distribution of school textbooks or pedagogical equipment. In any event, the interest in short-term planning closely reflects the concern of improving liaison with the administration, and of providing for monitoring and implementation of plans.

Preparation of long-term scenarios, a medium-term rolling plan, an operational plan, programmes and budgets: planning never stops. But its methods need to be modified.

In countries with centrally planned economies, the change in approach is considerable, since it is a question of moving from a forecasting model tied to a manpower allocation system, to a more simple prediction and decision orientation model, that leaves the way open for market forces to allocate labour among different types of employment. Planning must be less and less imperative, and become more and more indicative. This results in modifying its approaches.

In other countries, it is a question of taking into consideration the various financial, political and administrative constraints, while keeping in mind the long-term objectives.

Taking into consideration the financial constraints means recognizing that planning an education system that is stable, or sometimes even in regression, requires an approach and methods that are different from those used to plan a system in rapid expansion. It is not a question of indiscriminately slashing certain expenditures, but rather one of being imaginative in the search for relevant and low-cost solutions. This requires paying more attention to evaluation. Often it also means that the financing strategies have to be redesigned.

The planner must also make allowances for political and administrative constraints. On the one hand, he must explicitly integrate data of a political nature in the preparation of his plans, programmes and projects, for otherwise they are doomed to failure. On the other hand, planners must strive to improve administrative capacity, and to arouse the interest of implementers at different levels. This implies delegating more responsibility to regional bodies and to institutions. The problem of an optimal equilibrium between centralization, decentralization and participation cannot be resolved outside of a specific social and political context. Some of the regional groups preferred in fact to speak of deconcentration rather than decentralization, and exhibited a certain degree of scepticism regarding participation; nevertheless, if planners are to be in a position to detect changes rapidly and adapt to them, they cannot help but promote autonomy of institutions and intermediate echelons.

Whatever the specific form taken on by the structures, the planner is connected into an ever larger and denser network of individual and institutional relations, involving participation by a great diversity of agents. Thus a strengthening of the planner's capacity for motivation and negotiation is becoming a key obligation. This negotiation function is not limited solely to counterparts within the Ministry of Education or other government Ministries, for it implies dialogue with external partners: business leaders, people involved in continuous or non-formal training activities. It is becoming all the more complex in that these new partners do not necessarily share a common vision of the development of education. The negotiation function is in fact combined with a mediation function.

Participatory planning, negotiated planning, decentralized or deconcentrated planning: these three concepts, as debated at length during the workshop, allow for a better grasp of what the specific character of more strategic planning might be. With operational and training responsibilities being delegated more and more to other administrative levels, and dispersed among various agents, the State can regain its primary function of arbiter of social justice, compensator of inequalities and promoter of development. To do this, it must have mechanisms for regulation and tools for continuous evaluation.

The regulation mechanisms are quite varied, from examination and accreditation systems through to staff motivation and remuneration structures. The need for better understanding of what determines how different individuals act — what stimulates teachers to teach well, administrators to manage well, and pupils to participate and to learn — was a recurring theme throughout the workshop. It was suggested that the planner take an interest in this structure of motivations and incentives, in order to take better advantage of them. The monitoring and evaluation of plans or reforms were the poor relatives of educational planning for a long time. There are many reasons for this, having to do both with the structural weaknesses of planning bodies, and with the reluctance of certain decision-makers or managers to accept an evaluation that could be unfavourable for them. The greater the number of institutions involved in management and training within the formal education system, but also in the outside world, and the greater the amount of responsibility delegated to different administrative levels, in particular to institutions, the more indispensable it becomes to reinforce evaluation activities and to disseminate their results. This raises the more general issue of information, the last recurring theme of this workshop.

The situation of individual countries with respect to the field of information is extremely varied, ranging from those countries where a fundamental education data base has yet to be constituted and structured, or where the existing base is deteriorating for lack of means or organization, to those few developed countries, at the opposite end of the spectrum, where planning as a prospective and strategic activity, based on an ever richer and more detailed quantitative and qualitative data base, is perceived as a necessary, normal and continuous function of the administration, in support of decision preparation, project harmonization, communication and evaluation.

All the themes dealt with showed the need to improve the information base for planning in order to achieve: (i) greater reliability of collected data; (ii) more relevant and faster processing of these data (selection and preparation of indicators for decision-making at different levels); (iii) greater transparency of information.

More information is needed about the quality of teaching, results achieved by various institutions, costs and expenditure — especially expenditure by families. Nevertheless, the general impression is that there is already, in a large number of countries, a considerable amount of collected data, and that the main thing is to use them better and to disseminate them.

Conclusions

In the face of the challenges issued by a world both in full crisis and in full transformation, educational planning, far from giving up, must renew itself, in order to play its role of informing and guiding decision-makers, and act. Reflection about the future of planning, and about what form more strategic planning could take has not yet come to an end. New avenues of research are opening, including the following:

- the importance of comparative analysis of educational systems and planning, and their mode of adjustment to social change;
- the urgency of theoretical reflection about the hypotheses underlying certain models or approaches, in particular in so far as the respective roles of the public and private education sectors are concerned;
- the study of ways of regulating educational systems, and in particular the incentive measures that can be implemented to deal with the deterioration of educational systems;
- the importance of sub-sectoral methods of educational planning, covering especially basic education, but also scientific and technical training;
- taking into consideration obstacles to the implementation of school policies, due in particular to the lack of institutional capacity, and the need to revitalize management of educational systems, especially at the institutional level.

Initiation, regulation and stimulation of educational policies in liaison with all those concerned: to fulfill these new or regenerated functions of educational planning, the planner should be trained as a negotiator, as a means of inserting him in the collective decision-making process.

Appendix

List of documents for the Workshop

Orientation Note, *The future of strategic educational planning.*

Administration Générale de la Coopération au Développement, *Vers une planification stratégique de l'éducation, illustration sur la réforme de l'éducation au Rwanda.*

* Bienaymé, Alain, *Quelles leçons peut-on tirer de la stratégie des entreprises pour la planification de l'éducation?*

† Caillods, Françoise ; Postlethwaite, T. Neville, *Teaching and learning conditions in developing countries.* (In this volume, page 134)

† Diambomba, Miala, *Universities and development in Africa: problems and challenges for planning.* (In this volume page 174).

De Mello, E. *Some tentative guidelines for evaluating educational policy options for developing countries*

* Díaz, Hugo, *Processus et pratique de la planification de l'éducation en Amérique latine : le cas du Pérou.*

† Eicher, Jean-Claude, *The financial crisis in educational systems.* (In this volume, page 69).

* Gomez, Victor Manuel, *Education and endogeneous scientific technological development.*

* Greffe, Xavier, *Le plan "Informatique pour tous" : un essai d'évaluation de l'expérience française.*

* Greffe, Xavier, *L'enseignement à distance : problèmes et perspectives.*

* Gunatilleke, Godfrey, *The world crisis: some economic and socio-cultural perspectives.*

Gustafsson, Ingemar, *Creating conditions for learning.*

* Haidara, Baba ; Lemay, André, *Problèmes actuels du développement de l'éducation en Afrique subsaharienne.*

* Hashim, Datuk Omar Mohamad, *Strategic educational planning: the Malaysian experience.*

Jean, Michèle, *Le role de la planification dans le diversification de la formation professionnelle de la main d'oeuvre, l'exemple de la mise en oeuvre d'une nouvelle politique de la formation professionnelle au Québec (1984-1988).*

Jemal, A., et al. *Réflexions sur la planification régionale de l'éducation : le cas de la Tunisie.*

* Jozefowicz, Adam, *Education and employment: policy and planning experience of Poland.*

Kazem, M.I., *Considerations for relevant educational planning and meaningful development.*

† Klees, Steven, J., *The economics of education: a more than slightly jaundiced view of where we are now.* (In this volume, page 244).

Lankoande, Ali, *L'échec qualitatif de l'école en Afrique de l'Ouest.*

† Levin, Henry M. ; Rumberger, Russell W., *Education, work and employment: present issues and future challenges in developed countries.* (In this volume, page 209).

Little, Angela, *Who is planning what and for whom? Towards an ethnography of educational planning in rural Sri Lanka*

† Lourié, Sylvain, *Does education need strategic piloting?.* (In this volume, page 314).

* Malan, Thierry, *Processus et pratique de la planification de l'éducation : le cas de la France.*

* Morales-Gómez, Daniel, *Seeking new paradigms to plan education for development. The role of educational research.*

Mugogo, Noah E., *Tanzania's experience in educational planning and policy.*

Mumbengegwi, S.C., *The educational planning process and the present planning practice in Zimbabwe.*

* Murphy, Peter, *Collective school management: small within big is beautiful.*

* Nishinosono, Haruo, *The use of new information technology in education: evaluating the experience of Japan and other Asian countries.*

* Prakash, Brahm, *Planning for education in India.*

* Rama, German, *Education and equality of opportunity; some thoughts on planning.*

* Saint-Etienne, Christian, *La situation économique et sociale internationale et l'éducation.*

* Sander, Benno, *Management and administration of educational systems: major issues and trends.*

* Sanyal, Bikas C., *Education and employment with special reference to developing countries.*

† Skorov, George, *The economic and socio-cultural situation in the socialist countries with particular emphasis on the USSR.* (In this volume, page 39).

* Soumelis, Constantin, *Educational Planning at the OECD and in OECD Member countries.*

† Tedesco, Juan Carlos, *The role of the State in education.* (In this volume, page 292).

† Tibi, Claude, *The financing of education: impact of the crisis and the adjustment process.* (In this volume, page 100).

Timar, Janos, *Education, work and employment: planning the development of education.*

* Yoloye, E. Ayotunde, *Cross currents in the evolution of educational planning strategies: the Nigerian experience*

* Zhou, Beilong, *Strategy for educational development and strategic educational planning.*

Note: Papers marked with a dagger (†) are included in this volume. Those marked with an asterisk (*) are published in their original language versions (English or French) in the series of *IIEP XXVth Anniversary Booklets.* Copies of the other documents are available in mimeo form from IIEP whilst stocks last.

The economic and socio-cultural situation in the socialist countries with particular emphasis on the USSR

George Skorov[1]

This tired old millennium of ours has just eleven years left to run. And eleven years is a period we can hope to grasp and to shape. We can distinctly discern major trends of development and envisage their effects. We are becoming ever more convinced that whatever our differences, we live in an integral, interconnected and interdependent world. The global experiences we are all sharing affect us all, and make a great though not equal impact on all countries of the world community, both internally and on the international plane. Only by taking into account these interconnections and interdependencies, as well as differences in the internal conditions of development, can we draw up realistic plans for the years ahead. From this point of view, the changes now going on in the socialist countries merit a most scrupulous analysis.

Trends of development in the 1970s and 1980s and the search for a new model of socialism

The socialist world is entering its fifth decade (the USSR its eighth) as a powerful international grouping integrating a number of European, Asian and Latin American countries. Socialism has demonstrated its ability to carry out major historic changes, to ensure the equality of people and nations, to create a new mode of life characterized by economic development without cycles of 'boom and bust' to eliminate poverty and illiteracy, to introduce social security, the guaranteed right to work and full employment.

But the road travelled by the socialist countries has been neither easy nor straight. In the course of their development they have confronted many problems and difficulties and have had to deal with flagrant contradictions. The solutions and remedies they tried have been frequently flawed, sometimes resulting in tragedy or leading to stagnation, and in some instances to crisis. In the 1970s, the socialist nations began to suffer, though to different degrees, from growing difficulties in the economic, socio-political and ideological spheres. Three major shortcomings of their economic system became particularly manifest:

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(a) inflexibility of the economic planning and management mechanism, which was a primary cause of their failure to respond adequately to technological advance and consequently to adapt rapidly to structural changes in the world economy;

(b) inability to make intensive and high-productivity work attractive to working people and, as a result, a weakening of incentives that could improve economic efficiency;

(c) the dominancy of the producer resulting from the absence of alternative sources of supply and lack of competition and leading to a progressive steady deterioration in the quality of output (while also depriving the consumer of the possibility of choice).

Overcoming these negative trends became a major challenge to the socialist countries. They had to change their political structures and renovate the economic mechanisms. An active search for new solutions is now under way in all socialist countries. Everywhere restructuring has been placed on the agenda but, naturally, in different countries it is perceived differently and carried out with an eye on the specifics of the local situation, individual experience and accumulated problems. It would be no exaggeration to say that today the socialist world is engaged in a collective search for a new model of socialism which would be adequate to the modern age, a model attuned to revolutionary changes in science, technology and information, to the greatly increased educational attainment of the population, the development of culture and mass consciousness.

What is going on now may be described as a profound reassessment of the past and the present in the light of basic values and principles of socialism with a view to promoting self-correction in charting the future. The new model can by no means be identical for all the countries which make up the socialist world. The reforms therefore differ considerably from one country to another. However, behind the national specifics and the variety of local conditions, one can discern some common features which, in all probability, will shape the new image of socialism. These features can be seen through recent changes in the USSR, which was the first country to embark on the road of socialist development and the one that suffered most from its deformation.

The economy of the USSR on the eve of restructuring

Slow-down of growth rates

Following decades of unprecedented rapid growth, technological transformation and the remodelling of the economy, which turned a once backward, semi-agrarian country into the world's second industrial nation, the rates of economic development of the USSR began to slow from the late 1960s (see *Table 1*).

Table 1: Main indicators of economic development (five-year increments, per cent)

Indicators	1966-70	1971-75	1976-80	1981-85
National income	41	28	21	16.5
Industrial production	50	43	24	20.0
Agricultural production(a)	21	13	9	6.0
Productivity of labour(b)	37	25	17	16.3
Real income per capita	33	24	18	11.5

(a)Five-year average

(b)Throughout the economy

Source : Calculated from: *Narodnoye Khozyaistvo SSSR v 1970 godu*, (Statistical Yearbook), Statistika Moscow, 1971, p. 57; *Narodnoye Khozyaistvo SSSR v 1983 godu*, Statistika, Moscow, 1984, pp. 36-38, *Narodnoye Khozyaistvo SSSR v 1985 godu*, Statistika, Moscow, 1986, p. 38.

The real situation, however, was even worse for at least two reasons. Firstly, even the above rates were achieved, as is now apparent, on an unhealthy basis. If we exclude from the growth rates of the economy such factors as oil exports at the high prices then prevailing on the world market and the massive production of alcohol, it will appear that the USSR did not register any real growth of national income at all for nearly two decades. Worse still, in the early 1980s it even showed a decline.

Secondly, the economic growth was and partly still is due to the increase of the output which would not have been produced given a more rational use of economic resources. For example, the USSR produces twice as much steel as the United States, but only a fraction of its output of steel products. The rest is lost, wasted or left to rust in warehouses.

Another example is the manufacture of agricultural machinery. Although producing only 70 per cent as much grain as the USA, the USSR makes six-and-a-half times more tractors and eight times as many combine harvesters. The losses caused by low quality and slipshod operation of agricultural machinery are so huge that it would take the US industry 70 years to make as many grain combine harvesters as there are in the USSR standing in idle disrepair (late 1987). This machinery is sold to collective farms which frequently do not need it; 452,000 tractors over and above real needs were accumulated in collective farms in 1986 — all the machinery was in good repair but there was no one to operate the tractors.

The Soviet economist, I. Mamlygin, estimates that 45 per cent of jobs in the production departments of engineering works remain unfilled. The share of unfilled jobs throughout the manufacturing industry as a whole exceeds 25 per cent. Idle equipment in storage costs many billions of roubles. The inventories amount now to half a trillion roubles, with national income growth sometimes failing to make up for the growth of inventories.[2]

All these deadweight commodities, wasted machinery and idle capacities are included in the production of the GNP but, alas, do nothing to improve the real well-being of the population. These are the fruits of over-centralization of the Soviet economy, inefficient management and misuse of resources, all of which led to the economic stagnation of the past two decades.

Towards the mid-1980s, the economy found itself in a situation verging on crisis. Along with an absolute drop in the growth rates of national income, the food supply problem emerged, the ecological situation deteriorated, and acute social problems accumulated.

The widening technological gap

Perhaps the most alarming symptom of malaise in the Soviet economy was the fact that it began to lag behind technologically. At a time when far-reaching structural changes transformed the economies of most Western nations, with emphasis on resource and energy conservation and the widespread use of electronics and other high technologies, the technological development of the USSR actually slowed down. Not because the country had nothing to fall back upon as regards national R&D, but mainly because the economy failed to respond to innovations. The targeting of the planning and management system on the GNP growth, i.e. making quantitative indicators the supreme criterion of economic performance, proved the main reason why the pace of technological change slowed down and the quality of production was neglected. The foreign exchange earnings that came from exporting oil and commodities were used to a great extent to fill the gaps and solve current problems rather than for the strategic long-term modernization of the economy. The country began to lose one position after another. The technological gap separating it from the advanced Western countries once again began to widen. That had not happened since the 1920s.

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[2] *"Sotsialisticheskaya Industria"*, 5 January 1988.

Irrational employment

In spite of a significant slow-down in the rates of growth, the USSR did not experience an aggravation of the employment problem as it is traditionally understood, i.e. mass unemployment and under-employment, as was the case in the West at the turn of the 1970s and 1980s. But the recent economic difficulties laid bare major deficiencies in the use of manpower resources both at macro- and micro-levels, leading to serious economic losses.

The labour shortage had been traditionally regarded in the USSR as a central economic problem. The 75 per cent decline in growth of the working-age population in the 1980s (a demographic echo of the Second World War) seemed to bear out that theory. However, the real balance of labour resources pointed to the opposite conclusion.

Alongside the real shortage in some categories of skilled manpower, many signs of hidden and overt under-employment appeared in the economy. At a conservative estimate, there are at present 10 million redundant jobs, that is jobs that can be dispensed with without loss of output, for over 130 million employed.[3] In reality, their number is probably much greater.

The largest reserve of redundant manpower is to be found in management. Out of 18.5 million people engaged in this field of activity, one in seven could be easily dispensed with. But management is by no means the only field which shelters redundant jobs: in nearly all sectors of the economy a more rational organization and a more intensive pattern of work could lead to a 20-25 per cent cut in total employment without any loss of output. This is particularly true of agriculture, the construction industry and all other activities where the share of manual labour is 40 per cent or more.

A similar situation exists in science — this field employs one-and-a-half million people of which at least some could be engaged in other occupations with greater benefit to the country; also in health care which shelters 1.5 times more doctors per one thousand population than in the USA. The USSR Ministry of Public Health estimates that there are twice as many doctors in the country as are really needed. All this goes to show that Soviet labour is by and large not utilized efficiently. In addition the state pays regular salaries (and by no means small ones) to several hundred thousand workers in the domain of culture — writers, artists, musicians, actors, etc. One wonders whether the maintenance of such a huge army of workers, whose contribution to the development of culture could in some instances be questioned, is really the best use of public money.

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[3] V. Kostakov, "Zanyatost: Deficit ili Izbytok?" (Employment: Shortages or Surplus?), *Kommunist*, No. 2, 1987, p. 82.

Why then, even in a situation of economic strain, are managers unwilling to streamline the employment pattern and eliminate conspicuously unnecessary jobs? The answer is to be found in the economic environment. It does not allow for any such step to be taken because it would be contrary to the established principles of management. And why should they do so, if they are able to provide paid employment at the state's expense irrespective to whether it is needed or not from a production point of view? It is true, that it unduly swells the labour force. But on the other hand an industrial enterprise that operates by fits and starts requires a permanent reserve of labour, otherwise it would not be able to fulfil a monthly production programme. And finally, if the manager dared to dismiss some such workers he would fall foul of the trade union.

The organization of full and rational employment in 1986-2000 will result, according to available estimates, in releasing as many as 19 million people from the production sphere and at least 3 million from management. Such sizable reductions, however, will not lead to unemployment, since they will be made in the conditions of a marked slow-down of the working-age population growth and the availability of many unfilled vacancies at newly commissioned enterprises. But this situation will create an unusual psychological climate and require a new efficient mechanism for the redeployment of labour between various sectors of economic activity. It especially requires adequate schemes for retraining of manpower.

Tension in public finance

Against the background of economic problems accumulated in the past two decades or so, tension began to grow in the domain of public finance aggravated by the domestic and foreign constraints.

Because of a drop in oil prices on the world market in 1986, earnings from fuel and commodities exports fell sharply. The annual losses accounted for over 8 billion roubles. The state revenues diminished by another 9 billion roubles as a result of a cut-back in the sale of imported goods due to the shortage of foreign exchange. The concern about the spread of alcoholism and the deterioration of the populations's health led the government to cut by half the production of vodka and other alcoholic drinks, which led to the loss of 37 billion roubles of revenue over the past three years.

The introduction in 1987 of the state quality control system with a mandate to reject poor quality products resulted in the failure of quite a number of enterprises in the manufacturing industry to fulfil their production programme, and, consequently, to meet their fiscal obligations. The same was true of the consumer industries which generally produce a large amount of poor quality goods. The difficulty in marketing such goods also had an adverse effect on government revenue.

In addition, in the past fifteen years, wage increases have systematically outstripped the growth of productivity. This generated, as could be expected, inflationary pressure in the economy. Such a trend was further aggravated by the discrepancy between monetary growth and its coverage. In 1971-1985, the monetary aggregates grew 3.1 times whereas the production of consumer goods only doubled.[4] Regular write-offs of co-operative and state-run farm debts running to over 140 billion roubles have also contributed to the inflationary pressure by widening the gap between incomes and their material coverage.

As a result of all these developments, the government had to take extraordinary steps to ease the current financial situation, meet vital needs of the consumers and, at the same time, find investment resources, including those needed to finance the development of education, health care and other social programmes.

Causes of economic difficulties

One can point to several such causes. The first which comes to mind is the overall worsening of economic conditions, the diminution of basic production inputs which in the past served as the main source of economic growth. These negative trends can clearly be seen in *Table 2*.

Attempts to offset these trends by traditional means, i.e. by using more inputs per unit of output, had no success. Moreover, this led to serious negative consequences: disproportionate build-up of the fuel and energy sector, an upsurge in the production of commodities and their irrational use, the unwarranted increase of manpower employment, decline in the rates of growth of labour productivity, in the capital-output ratio and other indicators of efficiency. Efforts to remedy this situation by launching new projects only increased the number of unfinished construction sites and aggravated even further the growing economic imbalance.

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[4] Materialy Plenuma Tsentralnogo Komiteta KPSS (Materials of the Plenary Session of the CPSU), 25-26 June, 1987, Politizdat, M., 1987, p. 65.

Table 2: **Decline in growth of production inputs and efficiency of economic performance (five-year increments, per cent)**

	1971-1975	1976-1980	1981-1985
Production inputs:			
Fixed assets (a)	52	43	29
Capital investment	43	23	14
Production of materials and fuel	25	10	6
Labour force (b)	6	4	2
Economic performance (c):			
Fixed assets - output ratio	-16	-15	-12
Returns on capital investment	11	2	0
Efficiency of raw materials utilization	2	10	8
Productivity of labour	21	14	12

(a) "Capital stock" in Western economics terminology

(b) Excluding services

(c) Calculated on the basis of national income utilization

Source: Calculated from *"Narodnoye Khozyaistvo SSSR"* (Statistical Yearbook) for corresponding years.

An economy endowed with immense natural resources found itself faced with acute shortages of materials. A widening gap appeared between the needs of society and the level of production, between demand and supply.

Another, perhaps the most important, cause of economic troubles which reached a critical point in the early 1980s was that the entire economic mechanism (i.e. the economic planning and management system) came into conflict with the new development conditions imposed by the scientific and technological revolution. However, the political leadership then in power concentrated its efforts on the refurbishing ("further perfection") of the existing economic system, instead of having it drastically remodelled.

Mechanism of inertia

The old economic mechanism took shape mostly in the 1930s and survived until recently with minor modifications. It was based mainly on non-economic administrative and command methods and the scrupulous execution of these commands from the top by all those concerned down below. At a certain state of development, when it was crucial to concentrate national efforts on reaching a few key objectives, i.e. industrialization, modernization of agriculture, building adequate infrastructures, developing scientific and technological capability, etc., this mechanism made it possible to ensure a rapid progress. And this has long diverted attention from its negative features, particularly those incompatible with the moral values and basic principles of socialism.

The nation paid dearly for the leap forward from backwardness to progress in the 1920s and 1930s. It suffered tremendous moral, human and physical losses which cannot be justified by any historical circumstances. The command management methods bred bureaucratic centralism, coercion, and voluntarism. "Over all this, – writes the Soviet historian Vladislav Dashichev, – hung the pall of fear and terror cultivated during the years of Stalin rule, and that left deep, unhealing scars in public consciousness, in the national mentality."[5]

It is no surprise therefore that grave miscalculations in the economic strategy were made under these conditions. Despite the tremendous advance in industrialization (the USSR's industrial output was 73 times greater in 1967 than in 1913), agricultural production had only tripled over the same period. This brought about a sizable imbalance in the economy, particularly since the country's population had soared in the meantime from 159 million to 242 million people. This is one of the reasons why even now the USSR has to import a large amount of foodstuffs and fodder.

Another and even more important reason for the aggravation of the food supply problem in the Soviet Union was a steady decline in working and living conditions in rural areas, which suffered for decades from coercive methods of collectivization of agriculture and massive deterioration of its productive forces (notably animal husbandry and food storage and processing facilities) before they were improved at a later stage, from gross violations of democracy in the farm co-operatives and artificial constraints imposed on rural development by all kinds of rash administrative reforms.

Mistakes in economic policy formulation were also partly due to the absence of public discussion of the costs and benefits involved, which easily led to voluntaristic and arbitrary decisions. The consequences of some such decisions are only now beginning to assume their true proportions. Among them, for instance, loom large the construction of a series of hydroelectrical dams and power stations in flat country that flooded dozens of thousands of hectares of fertile land; the building of pulp-and-paper mills and other polluting enterprises on the banks of lakes Baikal, Ladoga and other natural reservoirs of fresh water; the reclamation of the virgin lands in the remote areas of Kazakhstan instead of the intensification of farming in the traditional grain-producing areas; the development of the irrational irrigation system which led to the degradation of the Aral Sea area and unprecedented salinization of Central Asia's soils, and other similar projects. By some miracle we have just avoided translating into reality the "project of the century" — a reversal of the flow of the great Northern rivers towards the south.

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[5] *"Moskovskaya Pravda"*, 16 April 1988.

Great losses have been inflicted by the attempts to impose administrative command methods on science; these attempts delayed for years the development in the USSR of such major sciences as cybernetics, genetics, pedagogics, sociology. Soviet society is still paying for this.

All this leads one to conclude that the administrative command system of management turned ultimately from a means of accelerating development into its opposite — a kind of brake, decelerating its pace. The most glaring features of the mechanism of inertia, which was consolidated during the years of stagnation (1960s-1970s), are:

- *monopoly of the producer and the emphasis on the quantitative growth of production* as opposed to the orientation on end-results (i.e. the quality and range of manufactured goods, their correspondence to consumer's demand, labour-, energy- and materials-saving, etc.);

- *"input-wasted" production methods* (i.e. cost maximizing and inflating the inputs per unit of output) which run counter to the principles of rational management;

- *inability to respond to scientific and technological advance*, a direct consequence of the situation in which the enterprise is more interested in "churning out" as much as possible of the old output rather than risk guaranteed profits and bonuses by turning out new and better products or technology;

- *lack of interest in efficient performance* as a result of ironing-out the income differentials both among the individuals and the enterprises;

- *crucial role of the managerial bureaucracy* who, due to their numeric strength, social status, size and mode of receiving income, developed their own group interests with corresponding stereotypes of conduct and thinking and became a major force opposing any progressive change, blocking economic efficiency, scientific and technological advance, and other fundamental changes in the society.

Social and cultural problems

The slowing down of economic growth, continuing decline in performance, and other negative trends in the Soviet economy have badly affected the social sphere. The standard of living of the population for a considerable number of years was falling well behind the industrial, scientific and cultural potential of the nation. And this was something very few people would put up with.

The "left-over" principle

The lagging behind of the social sphere was due in the first place to the uneasy history of the Soviet Union and the low initial level of development. Every rouble had to be saved to finance industrialization and defense, and later the war effort against Nazi Germany and the post-war reconstruction of the economy. It proved impossible to overcome that lag in the 1950s and 1960s. Over the past two decades, it grew even bigger. The allocation of resources for social purposes was done, as a rule, only after the share of investment in production had been established and amounted then to what was left over from it. This type of "left-over" principle of allocating funds for the financing of social programmes was in force until quite recently.

As a result of such procedures, the share of housing construction fell from 23 per cent of the national income in 1960 to 15 per cent in 1985, that of education from 10 to 7 per cent and that of health care declined to less than 4 per cent. The production of food and consumer goods also fell far below the demand, and the service sector remained at a rudimentary stage.[6] In other words, the degree to which material, social and cultural needs of the population were met by the mid-1980s was considerably lower than in 1960, when the crude death rate reached a record low of 6.7 per 1,000 population and average life expectancy at birth was 70 years. As regards the main social and cultural indices, the nation rolled significantly backwards during the past quarter of a century.

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[6] See in greater detail: A. Aganbeguyan, "Po Stupenyam Uskoreniya" (Going the Acceleration Way), *World Marxist Review*, No. 1, 1988, p. 60.

Anomalies in the moral sphere

The gap between the growing expectations of the people and reality, between rhetoric and actual achievements gave rise to anomalous phenomena in the moral sphere, notably social alienation and loss of faith in social justice.

False reporting on the fulfilment of production programmes gained wide currency. It made it possible for managers and high officials to embezzle enormous sums of public money and obtain bonuses and decorations for goods and services which had never been produced. The theft of materials belonging to industrial enterprises became commonplace. Bribery, extortion, and other forms of corruption affected a considerable part of the state officials, including those in the law enforcement departments called upon to combat that social ill.

Parasitic sentiments, levelling-off of incomes and consumerism distorted the meaning of social justice. The same yardstick was applied to one and all, the good worker and the slacker, the honest person and the swindler. This naturally weakened the motivation for working to the best of one's ability and eroded moral values and ideals which in turn led to political and civic apathy. Lies and hypocrisy became a norm of behaviour. The prominent Soviet sociologist, Tatiana Zaslavskaya, points out that

> "when social, economic, political, and judicial injustice began to grow, the public and especially the young people became alienated from the official ideology and sometimes found themselves at the margin of useful occupations. The lack of faith in the possibility of changing life for the better and in successful fighting against evil, pervasive scepticism, and often cynicism among the younger and middle-aged generations are the price we now have to pay for the past mistakes."[7]

Sociological studies show that most young people do believe in the principal ideological and moral values of socialism. Yet the number of those who were not interested in public affairs, nihilistic about the future, politically passive and undecided in their judgement on social developments, grew notably during the years of stagnation. Another Soviet scholar observes that

> "the deviations from the norms of the socialist way of life did great damage to the morale and morals of the young people. Consumerism, double standards, parasitism, egoism, the abuse of alcohol and drugs, and hooliganism

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[7] *"Izvestya"*, 7 March 1988.

> spread among part of the youth and destroyed their ideals."[8]

In the circumstances there emerged all kinds of youth fringe groups — heavy metal rock fans, bikers, suburban toughs and so on, pursuing marginal interests and subscribing to pseudo-values of brute force and the advocacy of national chauvinism. And yet, many young people were looking for a way out of moral degradation and for the wholesome forces of society — for doing away with negative trends, accelerating economic and social development and for a moral renewal of socialism.

Programme of restructuring: new approach to economic, social, and cultural development

Change amounting to a revolution

Restructuring came as society's response to the problems that have accumulated during the past quarter of a century. It is the overall policy of change. Its main components are: economic reform, democratization, openness, and moral renewal.

The process of restructuring got underway in 1985, when the new political leadership headed by Mikhail Gorbachev came to power. Its concept was elaborated and approved in 1986 by the XXVIIth Congress of the Communist Party (CPSU), the highest decision-making body in the country. The set of policies that have been in operation since then were further refined and made more specific at subsequent Plenary Sessions of the Central Committee of the Party. The new legislation was passed by the USSR Supreme Soviet in 1987 and 1988.

It has been acknowledged universally that these changes amount to a revolution. The distinctive feature of this revolution is that it has gone ahead at the initiative of the political leadership and that it reflects the situation where the 'tops' cannot and the 'lows' do not want to live in the old way.

Like any other revolution, restructuring has its opponents. They are people whose privileges it destroys, who will not or cannot adjust to change and adopt new ways, who cling to threadbare dogmas and outmoded principles. Many of them will not dare to reject restructuring openly, on the contrary they pay lip-service to change that they are determined not to allow to happen. Some are waiting for errors and shortfalls in order to exploit them and discredit the very idea of new policies. Quite a few have adopted a 'wait and see' attitude. Thus restructuring has become a struggle between those who believe that the old system is the model of 'true socialism' and those who regard the new policies as perhaps the last historic chance to build a genuinely socialist society.

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[8] I. Ill'inski, "Razvitie Sotsialisma i Molodiozh" (Development of Socialism and Youth), *Kommunist*, No. 6, 1987, p. 22.

The human factor

The central idea of restructuring is to set in motion the enormous human potential of the Soviet Union. The Stalinist command system inflicted the greatest damage to socialism by stamping out the initiative of the people — and sometimes the people themselves. It formed a peculiar type of manager at all levels of the administrative hierarchy, bound by petty tutelage, unaccustomed to acting independently, and unable to understand what efficient economic management was all about. That situation can only be redressed if democracy is allowed to fully develop, and this assigns the democratization process a key role in restructuring. It can be said that the fate of restructuring depends on the democratization of public life and economic reform. In the words of Mikhail Gorbachev "there can be no retreat here and we do not have anywhere to retreat to. Everyone must act resolutely and purposefully. We cannot afford to get stuck at the start or halfway. We must move onwards."[9]

Economic reform

Economic change under way today is basically a search for a rational combination of centralism and decentralization, the interests of the nation and those of individual enterprises and workers, of the plan and the market. The idea is to create an effective incentives system to foster rapid technological advance, turn a badly unbalanced economy into a balanced one, and put an end to the dominance of producers so as to enable the interests of consumers to prevail.

The objective of the reform is to embark upon an intensive mode of development (more output per unit or input), improve the efficiency of economic performance and create an economic mechanism based on efficient rather than administrative methods of management. The distinctive feature of the current reform, making it different from all the preceding ones, is that it is a comprehensive one. It extends to the system of central planning and supply, the management of industrial enterprises, public finance, the credit and monetary system, price setting and trade. It is designed for the long term and is to be carried out in stages (1986-1989 — elaboration, 1987 and onwards — implementation). The new economic mechanism is expected to attain its full capacity towards the mid-1990s and over the second half of the decade.

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[9] M.S. Gorbachev, "Revolutsionnoy Perestroike — Ideologuiyu Obnovlenya" (To Revolutionary Perestroika — Ideology of Renovation), Report at the Plenary Session of the CPSU, 18 February 1988, Politizdat, M., 1988, p. 24.

The reform provides for changes in the following areas:

1. Diversification of the forms of economic activity

Various forms of co-operative, family and individual enterprise are being introduced in industry and agriculture alongside and on an equal basis with state-run enterprises. The family and individual contract system and the leasing of land, machinery and whole enterprises, are gradually developing in farming and manufacturing. The pluralism of the social forms of economic activity is, perhaps, the most important innovation since Lenin's New Economic Policy (NEP) of the early 1920s. New legislation has been passed by the USSR Supreme Soviet on the state enterprise, on individual labour activity, and on the co-operatives. The idea is to introduce a new model of socialism which can be described as a Leninist model, because it incorporates the basic ideas of building socialism advanced by Lenin and adapted for the present day, as opposed to the former Stalinist model of administrative state socialism.

2. Substantial decentralization of the management system

The management of the economy is to be radically decentralized to release the initiative of those engaged in economic and business activities, change the role and functions of the central national planning, and combine mandatory and indicative planning with the market. The strategic role of the GOSPLAN, the State Planning Agency, is to be considerably enhanced while its day-to-day operational activities are to be drastically reduced. Its functions will be to set physical targets for 250-300 types of strategic products (from the 24 million types now produced) and to distribute capital investment resources among projects of national importance. The main method of directive planning, incorporating elements of market competition, will be the placing of state orders with enterprises on a competitive basis. It is expected that by the mid-1990s state orders will account on average for 30 per cent of enterprise output. The remaining 70 per cent will be determined by the market through contracts between enterprises themselves or by consumer demand through wholesale trade.

Indicative planning will set the guidelines which may be taken into account by enterprises, if they so wish, in order to draw up more realistic production programmes. It will also establish basic norms, that is 'ground rules', binding on everyone. Among these will be the tax rates, interest rates, depreciation rates, and the payments for land, water and other natural resources. Prices will be fixed from the centre for only several hundred strategic products. The centre will also set the upper limits for the fluctuation of 'floating' prices for several thousand products, the manufacture and marketing of which will remain under state control. The prices of millions of other products will be determined by the market.

Another important change concerns the distribution system. Administrative rationing and distribution of the means of production (machines, equipment, energy and materials) will be replaced by allocation by demand and supply in the market (wholesale trade). It is hoped that this innovation will do away with the chronic shortage of producer goods and defreeze the material assets that are now lying idle in warehouses throughout the country.

3. Enlarging the economic autonomy of enterprises

This is the corner-stone of the entire economic reform. The idea is not merely to expand the rights of enterprises by restricting the powers of central government departments; under the new legislation,[10] Soviet industry is switching to self-management, cost-accounting for profit and loss and self-financing. It is expected that the transition will be completed by the end of the decade. As a result, enterprises will have to pay from their own income for all they need — investment resources, machinery, equipment and so on. They will be using their own income also to finance current spending and bonus schemes. Investment to expand and upgrade production capacity will come from their profits or repayable bank credit. Some of them are beginning to issue their own shares and securities in order to make use of other enterprises' financial resources and private savings, which is yet another major innovation. The closing down of bankrupt enterprises is accepted in principle as a normal business procedure; but in actual fact it is always an emergency procedure, the state considering it its duty to bail out enterprises in difficulty, though on a strictly individual basis. Another innovation whose expediency is contested by some economists is the introduction of democracy in the workplace through elections of enterprise directors and managers by worker collectives. However attractive this measure might be from the point of view of equal opportunity and workers' participation in management, its validity from the economic efficiency standpoint is yet to be proved. All this gives the 1987 law on the state enterprise very special significance.

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[10] See: *"Izvestya"*, 1 July 1987.

4. Cardinal change in price formation, finance and credit systems

These changes, if fully implemented, will ultimately transform to such an extent the entire economic mechanism that a new business environment will emerge to shape the economic life of the nation in the 1990s and beyond.[11] The radical revision of the price system and the principles of price formation now under way will certainly be of crucial significance for the success or failure of the entire reform process.

The present pricing system emerged as a result of a multitude of piecemeal political and administrative decisions in the course of nearly seven decades. These decisions, motivated by various, mostly non-economic considerations, were hardly related at all to the real production costs of goods. As a result, prices of raw materials and energy are kept at levels well below those of the world market (which is naturally not conducive to conserving them), while the prices of machinery and equipment are jacked up which, in turn, does not provide incentives for improving their quality. In the consumer sector the prices of food, public transport, rents, and communal services are kept very low, while the prices of manufactured consumer goods, particularly durables, are set at a very high level.[12] Vast government price subsidies represent a quarter of the budget expenditures, with food price subsidies alone accounting for 75 billion roubles.

The present system acts as a giant pump that carries resources from one sector into the other. The resulting distortion of the exchange value of goods reminds one of the Looking-glass House from "Alice in Wonderland" and "Through the Looking Glass", where "the things go the other way" and "the words go the wrong way". As long as the Soviet economy remains in that maze, no-one can say with certainty which industries operate at a profit and which at a loss.

The purpose of the reform of the pricing system is to clarify this issue and develop a more realistic and more flexible structure of prices based on real costs and preferences of the consumer, a structure that will enable prices to balance the supply and demand. Reform will set three categories of prices: centrally fixed prices for the strategic investment and consumer goods, negotiated prices that can vary within established limits, and freely floating prices. State subsidies will gradually be withdrawn. At the same time, political guarantees have been given that the changes in price structure and price formation would not be detrimental to the interests of the people. A possible increase in the prices of foodstuffs will be offset by higher pay and pensions and lower prices for industrial consumer goods.

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[11] See: "O Korennoy Perestroike Upravlenya Ekonomikoy" (On a Radical Restructuring of Management of the Economy), Collection of Documents, M., 1987, pp. 150-178.

[12] For a medium-size passenger car 'Volga', one is supposed to give eight tons of meat, if the exchange is done at retail prices. If it is done at the cost of production, then one must give for the same motor car half a ton only, or 16 times less.

The purpose of the financial and credit reform is to do away with inflationary financing practices and to build an extensive and sound credit system. In order to meet that objective, the banking industry has been reorganized and new specialized banks have been set up in the main fields of economic activity. However, more steps have to be taken here to effect a decisive change.

A currency reform will be a logical sequence of the change in the pricing system and the finance and credit system. Its two most immediate goals, which are to be reached in 1990-91, will be to establish a more realistic and single rouble exchange rate (instead of about ten thousand different rouble exchange rates at present) and to make possible a transition to the convertibility of the rouble, first partial convertibility at the level of central banks and later on full convertibility. It is expected that within the framework of the economic grouping of the socialist countries (CMEA) the rouble will become fully convertible in the first half of the 1990s. As to its convertibility into hard currencies — an indispensable step on the way toward integrating the USSR into the global economy — this may take some more time and preparation.

5. Restructuring foreign trade

The restructuring of foreign trade is necessary to promote the country's advance towards an open economy and make possible more effective participation in the international division of labour. Its purpose is to transform foreign trade from a means of footing the bill for current shortages into an instrument for promoting structural change in the economy and channelling the two-way flow of an increasing volume of goods and services in and out of the country.

Three groups of measures have been adopted recently with that purpose in mind:

(a) The management of the foreign trade sector was overhauled in 1987 by merging government departments with similar or parallel functions and forming a single Ministry of external economic relations in addition to a Standing Commission with broad co-ordinating functions within the framework of the USSR Council of Ministers.

(b) At first, 21 ministries and 75 major companies had been given the right of direct access to foreign markets. Since 1989 such a right has been granted to all public and co-operative enterprises whose products can compete in the world market. This is a major reappraisal of the notion of the state monopoly of foreign trade in effect since 1918.

(c) Joint ventures involving foreign partners have been launched since 1987 to manufacture and market goods and services. By January 1989 over 175 such ventures had been started and a few dozen were fully operational. The further development of joint ventures will depend on the performance of those already under way as well as on the progress of economic reform.

The Soviet Union has recently been taking greater interest in the activities of the GATT, IMF and the World Bank. Considering the positive trends in world politics today, it is only natural to assume that these international agencies may sooner or later become truly universal institutions.

Social development

However important economic reform may be in itself, its ultimate objective is to resolve the outstanding social problems and to improve the quality of life and the standard of living of the population. From that point of view, giving priority to meeting social needs and building the appropriate infrastructure and supporting industries is of momentous significance.

As regards *food supply*, which is the most pressing problem, the situation still remains tense and the demand for meat and some other essential foodstuffs has not yet been met. And this, despite the 10 per cent increase in farm output in 1986-87 which equals the overall growth over the previous seven years. A greater part of that increase only compensated for the reduction in food imports and it is for this reason that there has been no notable improvement in the overall food supply.

The second most pressing problem, that of *housing*, has moved from a standstill, breaking the stagnant trends in this sphere for the first time in 20 years. This was achieved by channelling part of the investment from industrial to residential construction, which enjoyed a 10 per cent increase in financing in 1987. The number of flats built in 1987 reached 2.4 million, against 2.2 million in 1985,[13] and is expected to increase to

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[13] "Narodnoye Khozyaistvo SSSR za 70 let" (National Economy of the USSR for 70 years), Commemorative Statistical Yearbook, Financy i Statistika, M., 1987, pp. 408-409.

3 million by 1990. The goal is to provide each family with a flat with modern facilities or a private house by the year 2000, i.e. to build altogether over 30 million residential facilities.

The third most important problem is that of ***health care***. In 1987, for the first time more than 6 billion roubles were allocated to meet the needs of the medical service.[14] Additional resources were made available to strengthen its infrastructure, improve the supply of medicines and give physicians and paramedics greater cash incentives. But these are only emergency measures. In order to bring about a dramatic improvement of the situation, a long-term programme was adopted in 1987 for the restructuring of public health care until the year 2000.

At the same time, efforts have been made to expand the range and improve the quality of services, increase pensions and retirement benefits, as well as improve working conditions for those who are economically active. Naturally, there has not yet been a dramatic breakthrough in the improvement of the social sphere broadly speaking, but it can be said that the vectors of standard of living in the USSR are beginning to change direction for the better.

Reform of the education system

The importance of educational reform follows from the main political objective, that is reforming the fundamentals of Soviet society. In order to achieve this objective, well-educated, determined and competent people are needed; people willing to look for better ways of organizing society and able to live and work in the conditions of political democracy and economic autonomy of enterprises; people who would not be afraid to assume responsibility for the destiny of the nation.

Where the old education system failed

Can the old system of education bring up and form such people? The question is rhetorical. Here is what the Soviet sociologist, Igor Bestuzhev-Lada, says in this connection:

> "Our school is very sick. And this is true of all of it — from nurseries to post-graduate education. The diagnosis, in ancient Greek: anachronism. Translated into a commonly understandable language — what was created

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[14] "*Pravda*," 12 May 1988.

> about 70 years ago under a given set of circumstances to deal with a given set of social problems fails to work under a different set of circumstances to resolve entirely new problems. Nearly a decade and a half ago a therapeutic approach termed 'the perfection of the system of public education' was tried. Ten years later it was discovered that hollow pronouncements and good intentions have no curative powers. Five years ago it was decided to resort to surgery — a 'reform'. Hardly three years had passed when it became abundantly clear that the hospital cart carrying the prostrate school got stuck and still cannot roll up to the operating theatre".[15]

The metaphor sums up the situation very aptly, but speaking seriously the reason why the education system has to be fundamentally restructured may be reduced to the following.

By the mid-1970s, the system of universal secondary education had been introduced throughout the country. Every year it turned out 4 million school leavers.[16] Parallel to that, the higher school kept on increasing the number of graduates with diplomas out of sheer inertia and in accordance with the principle — the more, the better: 343,000 in 1960, 631,000 in 1970, 817,000 in 1980, and 860,000 in 1985.[17] The quality of tuition was not exactly at the centre of everybody's preoccupations, and the training itself was very traditional and formal: everyone was taught the same things the same way. The retraining system was even less satisfactory, both in qualitative and quantitative terms.

School leavers' and college graduates' skills became increasingly divorced from the real manpower needs of the economy, in spite of what looked like a well-run and efficient system of educational planning. With every passing year, the ratio between the number of personnel with and without diplomas was inexorably approaching 1:1 (1987 — 2.6 million workers versus 2.1 million graduates of higher and secondary specialized schools).[18] This led to the emergence of an acute economic and social problem, i.e. of a relative over-production of diploma-holders and a parallel shortage of skilled manpower on the factory shop-floor, in mines and on the farms. Such an imbalance resulted ultimately in an unusual situation, where the pay of factory workers was in many cases several times

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[15] "*Uchitelskaya Gazeta,*" 6 February 1988.

[16] "Narodnoye Khozyaistvo SSSR za 70 let", op. cit., p. 527.

[17] Ibid., p. 552.

[18] Ibid., pp. 423, 552.

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higher than the salary of engineers, physicians, lawyers, teachers, and other diploma-holders. This, in turn, led to a situation which no-one could have foreseen only a few years before: from the 1970s professionals with diplomas moved en masse to jobs that did not require higher education. By the mid-1980s a total of seven million professionals had 'defected' in this way. One in every five professionals with a college diploma became a lathe-operator, a car driver, a loader, or a salesperson.[19] The jobs of professionals were filled by 'practitioners', that is people with no specialized education.

This brief description of the situaion can have but one interpretation: the system of education was firmly in a dead end. Expanding secondary and higher education on the same basis as before was utterly absurd, because college graduates were striving to take jobs that needed no higher education while the shortage of trained workers continued to increase. The blame for this situation should not be laid on the education system alone, but it does have its share of responsibility to bear for such a state of affairs. Awareness of this absurdity first led to the idea of 'perfecting' the school and then of restructuring it. A decision of crucial significance was taken in 1988: to merge the three government departments responsible for public education (Ministry for Education, Ministry for Higher and Secondary Specialized Education, State Committee for Vocational Training) into a single State Committee for Public Education of the USSR. The new Committee is: (i) to elaborate the strategy for educational development, manpower training, and long-term planning, (ii) to manage the system of manpower retraining and improvement of skills, and (iii) to make full use of the research capability of colleges and universities.[20]

The dismantling of barriers separating secondary, vocational and higher education is not intended as a mere administrative measure. It reflects a new vision of education as a single, uninterrupted and integrated process in which the school, vocational institution and college act together to form the individual. This calls for the elaboration of a new notion of secondary education as the most pressing task in restructuring the educational system as a whole. Professor G.A. Yagodin, Chairman of the newly formed Committee for Public Education, referring to the past mistakes and failures in introducing universal secondary education in the Soviet Union, said recently:

> "We have undertaken to deal with this problem without a sound infrastructure, without a sufficient methodological groundwork, and without an appropriately trained corps of teachers. The compulsory nature of that education led to a

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[19] *"Uchitelskaya Gazetta"*, 6 February 1988.

[20] *"Pravda"*, 15 April 1988.

> situation where every school student was pulled through to receive ultimately a certificate of secondary education, even if he or she were incapable or unwilling to learn. This led to the obsession of false reporting in order to show a high percentage of success. Form prevailed over content and the responsibility to the government prevailed over the responsibility to the people, which to all intents and purposes disappeared".[21]

This new notion of education must be backed up with an appropriate infrastructure. Of no lesser importance is the task of retraining the corps of teachers. The school must also be cleared from perfunctory routines. Innovative ideas and the search for new forms of bringing together pedagogical science and teaching practice must be encouraged in every possible way. This will, no doubt, require considerable efforts.

The main problem facing higher education today is believed to be that of improving the quality of graduate training. The best way to achieve it is thought to be by encouraging creativity in graduate learning by offering students the possibility of choice of subjects and involving them in research and individual work from the first years of higher education. Democratizing the management of educational institutions and assuring student participation in solving important issues of college management is another pressing problem in the higher education system.

In the course of restructuring, other problems are likely to arise and some of the decisions taken today may have to be reviewed or cancelled should they prove to be wrong, while some new decisions will have to be taken; however, contrary to past experience, this will be done openly and democratically — something which makes the current educational reform, and in fact all the reforms, different from previous ones.

Implementation: hopes and anxieties

These new policies have awakened the society and given the people hope that the country may discover a way out of the impasse in which it found itself during the period of stagnation. Restructuring is today entering a decisive phase — that of implementation.

The more obvious it becomes that the process of restructuring is not a temporary, tactical, cosmetic change, but a profound, permanent, strategic transformation of the foundations of Soviet society, the greater the anxiety about its fate. Will society be able to use to the full the unique historic chance resulting from the 'changing of the guard' in the mid-1980s, the rupture with the past, and the momentous turn to openness and democracy

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[21] *"Pravda"*, 16 March 1988.

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– the promise for the future?

Reasserting socialist values

An intensive process of moral renewal is underway, as well as the restoration of justice and legality. Literature, the fine arts, the theatre and cinema are going through a genuine renaissance. The blanks in recorded history are filled one after another and lessons drawn from the tragic events of the past. Broader sections of the public are increasingly becoming involved in an interested discussion on what to do next.

Moral values that had been forgotten and relegated into the background are being reasserted; they are being cleared of the bureaucratic rust, distortions and dogmatism that sought to vindicate everything. The basic socialist values such as humanism, orientation towards the working man, and the release of the creative potential of the individual are gradually being restored as accepted norms of behaviour, as are overall human values like truthfulness, integrity, duty, justice, tolerance, etc. Change affects the mass consciousness and psychology of the people, their economic interests and social status.

New political thinking

The political system is also undergoing profound change. The 19th CPSU national conference held in June 1988 imparted a powerful impetus to that process. Both the structure of political power and the role of various bodies and organizations in the system of political management are affected. A distinctive separation of functions emerges between the Communist Party, the legislature and the executive.

The Party continues to play a paramount role as the political vanguard and generator of ideas, the organizer and the guarantor of perestroika. The power of decision, however, is expected to move gradually to the Soviets, i.e. elected councils of people's representatives, which are the backbone of the Soviet political system. Their role will dramatically increase in the years to come, while that of the executive bodies and administration, which were omnipotent in the past, will be reduced to more subordinate functions.

For the first time in modern history the legislative elections of 1989 in the USSR were based on a choice of several candidates. An unusually broad spectrum of people were put forward as candidates, among them former dissident leaders, distinguished representatives of the Orthodox Church and the Islamic faith, environmentalists, radical youth leaders.

Along with the Congress of people's deputies (whose 2,250 members were directly elected from a choice of candidates) a new style executive parliament of 450, the Supreme Soviet, was elected by the Congress to look into all legislation going through the highest legislative body, which hitherto had been merely rubber-stamped and approved without discussion.

Broad powers were given to the President, and a system of checks and balances was conceived in such a way as to prevent any abuse of power by the executive. Strict time limits were set on the holding of office by high officials, which means that no-one, including the President, may remain in power for more than two terms of office (10 years altogether).

An important part of the political reform process is the formation of a law-based society, in which the judicial authorities will have real independence from outside interference; complete equality of all persons vis-à-vis the law is guaranteed. The goal set for achieving this reform is the 1990s.

Significant changes have been proposed in relations between the central government and the National Republics with a view to increasing their say in educational, cultural and other social affairs, as well as achieving cost-accounting for profit and loss at the Republic and regional levels. Steps have also been taken to settle outstanding problems between various communities and ethnic minority groups, of which the most acute has been the conflict between Armenia and Azerbaidjan over Nagorny Kharabak.

All these measures are aimed at establishing a new mechanism of power and management based on democratic principles, openness and involvement of the people in the political life of the country.

Economic dualism

Implementation of the economic reform is a very difficult task. It is here that the real test of restructuring lies. It runs into many complex problems; these are of two kinds:

The first can best be characterized by the saying: "The dead cling to the living". The legacy of the past does not disappear in one day. Old methods of management, habitual ways of doing business, human inertia, even the outmoded legal framework do not disappear by themselves just because they are inefficient or do not fit into the new concept of society's development. Behind them are vested interests, and those that want them to be preserved. Many people complain about the slowness of restructuring, and they are frustrated by the meagre results achieved so far, particularly in agriculture and production of consumer goods — two fields in which new policies are expected to bring prompt and notable results.

Economic dualism is probably the most characteristic feature of the current situation in the Soviet economy today as the old system and emerging new system coexist with one another, the former, alas, prevailing so far. The activities of industrial enterprises are still constrained by petty tutelage and over-management from above. The slow transition to the new system of management in industry shows that it is hardly possible to accelerate growth within the existing planning framework and restructure the economic mechanism at one and the same time. These two tasks clearly contradict each other, and yet they are both present in the current economic policies. Despite all the rhetoric about restructuring, what counts for the enterprise is still the production plan which aims at maximum increase of the gross output (in Russian — 'val'). It looks as though either 'val' will come to dominate the new economic mechanism or the new mechanism will put 'val' where it belongs.

Bureaucracy is another heavy legacy of the past, and seems at times an intractable problem. It is evident that bureaucracy is a brake on the new development process. A mighty conservative force which cannot be got rid of by legislation alone: it is too deeply entrenched in the very fabric of the Soviet system of management, though by no means limited to it, as the experience of many non-socialist countries demonstrates. Bureaucrats cling to their privileges and prerogatives and try to act as if nothing has changed. It would seem that the decision to cut the staff of government departments by 50 per cent should change the situation dramatically, but this is far from being the case. Apparently, it is not enough to cut down the administrative personnel by half, it is also necessary to eliminate their functions. For as long as even a halved administrative staff preserve their functions and continue to issue mandatory directives, the economic autonomy of enterprises will remain a fiction.

Improvement in agriculture is also long overdue. The right, given some years ago to the co-operative and state-run farms, to sell on the market 30 per cent of what they produce over and above the planned target seems not yet to have been taken up. The reason is simple. The procedure whereby all they produce is taken away at fixed prices by the state procurement agencies has not been changed, and this leaves farms virtually nothing to sell on the free market. At the same time local authorities have clearly given a cold shoulder to family farms, delivery contracts, the leasing of land and other novelties approved and recommended by the government. The reason for this is also simple enough: under the family contract system, as well as the free sale of the produce on the market by co-operative and state-run farms, the relationship between the producer, the purveyor, and the consumer becomes crystal clear. In such conditions there is no point in keeping a multi-storey bureaucratic pyramid over the village, its only function being to extract compulsory deliveries from the farmers. That is the reason why hundreds of thousands of managers at all levels of the bureaucratic pyramid are going out of their way to prove that without them everything will crumble and that the status quo must be maintained.

Problems also arise in industry. When the law on the state enterprise was passed in 1987, it was assumed that all the rules and regulations contradictory to it would be revoked. That idea never got off the ground: out of the existing 200,000 ministerial instructions only 20,000 were revoked, while the rest are still in force. Can an enterprise really be autonomous when in most industries state orders until recently exceeded the previous planned targets, and carrying them out called for using 100, sometimes even 110, per cent of the entire production capacity? More generally, over 80 per cent of the industrial output in 1988 was still planned from above.

Equally serious problems arise in the use of profits. The law does not specify which part of the profit the enterprise can retain, and government departments and ministries, while paying lip-service to restructuring, establish arbitrary norms (shares of the profit distribution) which enable them to take away between 80 and 90 per cent of all the enterprise profit. It is true that most of the profit taken away goes to finance other enterprises, some inefficient, others embarking on new ventures. But whatever the motives, the fact remains that the right of individual enterprises to dispose of their own earnings in accordance with the law of 1987 is blocked even today by administrative practices that are still in force. In addition the number of indices planned from above has not diminished, in fact it has even increased. In the circumstances, only a few enterprises, headed by really strong managers who are prepared 'to die rather than surrender' to ministerial pressure, can demonstrate the advantage of going over to full self-support, cost-accounting for profit and loss and self-financing. It comes as no surprise that only 9 per cent of factory directors polled in 1988 said that their expectations on results of the economic reform had been "basically met", 49 per cent that they had been only "partially met", 21 per cent that they were "not met at all", and the remaining 21 per cent were undecided.[22] And yet the situation does change, although not as quickly as one would wish.

Incomplete reform

The second kind of problem arises from the fact that the reform is not yet completed and a few key issues of the new economic mechanism have not yet been solved or even devised. Among them are:

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[22] 19th All-union Conference of the CPSU, Documents and Materials, Novosti Press Agency, M., 1988, pp. 118-157.

- restructuring of the pricing system which distorts the real performance of enterprises, either by swelling the costs of production (mining and farming) or unduly increasing profits received (machine-building and consumer goods);
- setting realistic interest rates; these still remain largely symbolic instead of being an effective instrument for stimulating efficient performance and creative management;
- the timid progress of wholesale trade in the means of production, the distribution of supplies still carried out largely through the old system of administrative rationing and distribution; and
- lack of clarity as to how to proceed with the badly needed reduction of the redundant administrative personnel. As one analyst put it recently: "An alarming situation is emerging in society, a huge managerial pyramid attacked from all sides by the masses awakened for action is going over from the initial confusion to a counter-offensive."[23]

Slow progress

There is no wonder that under such circumstances restructuring has been painfully slow. Its progress is hampered by the complexity of the problems with which it has to deal, as well as by inertia and opposition. The present moment is particularly difficult because the transition to new economic conditions started at a time when the current Five-Year Development Plan (1987-90), which was conceived before restructuring got underway, has already been in force and all the resources already committed. Logically, economic change of such magnitude would require a corresponding redeployment of resources. However, by the time it was realized any major move to this effect had become impossible without incurring serious negative consequences. This cannot but result in dualism in the economy, conflicting interests, and inevitable compromises, which do not exactly contribute to the success of new policies. In addition, such circumstances as the fall in oil and commodity prices, the ill-conceived anti-alcohol campaign, the Chernobyl disaster, the burden of Afghanistan, and the tragedy of Armenia, have further aggravated the financial strain and reduced the chances of an early improvement of the economic situation. Many people, therefore, are convinced that "nothing is changing" or that "they do it all wrong" and as a result doubts arise about the feasibility of the reform. Such sentiments are understandable and they can be overcome only by firm advancement, elimination of economic dualism, and undisputed assertion of the new methods. The supporters of change believe that procrastination is both unacceptable and dangerous, since faith in the new policies may be lost if there are no tangible results. To avoid such an outcome, the government made a drastic decision to cut defense spending and proceed towards a unilateral substantial reduction in arms and the armed forces in 1989-90, including the destruction of chemical weapons — even before the conclusion of an official international agreement.

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[23] *"Sovietskaya Rossia"*, 4 October 1987.

Now that restructuring is entering a decisive phase, the main danger is posed by conservatives who are trying to reverse it. In his speech on the occasion of the 70th anniversary of the 1917 October Revolution, Mikhail Gorbachev said

> "it would be wrong to turn a blind eye to a certain strengthening of the conservative forces which look upon restructuring as a threat to their selfish interests and objectives. This manifests itself not only in managerial circles, but also in labour collectives. There can be no doubt at all that the conservative forces will take advantage of any difficulty to try and discredit restructuring and cause discontent among the working people."[24]

Growing support

The struggle which unfolds between the old and the new, between those who are able and want to work and those who cannot or do not want to is a bitter one. Naturally, it does not turn into class antagonism, but its intensity is quite strong. Heated debates are underway in the mass media about the obstacles to restructuring and the methods of overcoming them. For the first time in many decades, a pluralism of opinions is felt throughout the country. That is not something ordinary people are used to; it requires a certain political maturity and conviction that this is the norm and not the exception, and such feelings are not readily available. Despite the positive changes which have already occurred in the political climate, in the socio-cultural and moral domains, many are still not convinced that there is no alternative to perestroika. They do not see, including some in the higher echelons of power, that economically speaking the nation has merely stepped back from the edge of the abyss and that there are no grounds for complacency. Quite a number of people are still hesitant because restructuring upsets their habitual, albeit not easy, way of life. Far from all — even among leaders, let alone simple mortals — have realized the real gravity of the situation, which amounts to no less than this: unless the negative trends of the recent past are definitely broken and done away with, the Soviet Union may ultimately find itself on the sidelines of history.

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[24] M.S. Gorbachev, "Oktiabr' i Perestroika: Revoliutsia Prodolzchaetsa" (October and Restructuring: the Revolution continues), Politizdat, M., 1987, p. 40.

It is encouraging, though, that the standing of the new policies among the people at large is quite high and that the numbers of the supporters of change keep on growing. It is also encouraging to think that if sizable progress is made soon in an area such as, for instance, food supply — which is quite feasible provided the decisions taken are implemented — then active support for the new policies will increase considerably. Significant changes in the political structure as a result of the 1989 general election, and further development of the political and legal reform process, will also, without any doubt, assist in increasing such support and hopefully make restructuring irreversible. The general feeling in the country now is that there is a real opportunity to go ahead in the chosen direction. The question is to what extent this opportunity will be translated into reality.

The international significance of perestroika

The rebuilding of the foundations of socialist society is above all a domestic affair of the socialist countries themselves. But it has, beyond any doubt, international implications. And this not only in terms of new political thinking and improvement of the international situation which has already become a reality of our time, but also in the form of the potential impact it may have on the world community in the future. However difficult the fate of socialism may have been at times, it was, and still remains, the only real alternative to capitalism. How attractive that alternative will be depends ultimately on the success of restructuring.

The financial crisis in educational systems

Jean-Claude Eicher[1]

Introduction

The world educational crisis, announced prophetically by Philip H. Coombs at the end of the sixties, at a time when (in the words of Torsten Husén) "an almost euphoric belief in education" still prevailed almost everywhere (Husén, 1979) has now extended to the entire world.

This crisis has many dimensions. It is not just a question of the growing inability of public authorities, in almost all countries, to finance the continued growth of an essential service; for there is some question as to the very ability of the educational systems we know to achieve the objectives that have been assigned to them.

First of all, the ability to train the qualified manpower needed by the productive economy. In the developed Western countries, Ivar Berg's sensational 1970 work, *'Education and jobs: the great training robbery'*, was the crystallization of rather widely shared concerns, and was followed by many other publications along similar lines. In developing countries, naive belief in the virtues of education as a growth factor was followed by the deception of graduate unemployment. Even in the socialist countries, the numerous works on the scientific and technological revolution often stressed the fact that this revolution necessitates a profound re-examination of the organization and the functions of education, "and even a re-thinking of its objectives" (Vladislavlev, 1987).

Next, the ability to teach basic skills to all students. An entire volume would be needed to list all the works criticizing 'declining standards', the fact that "half the students graduating from primary school cannot read", the inability of young people to express themselves correctly, etc. Even if one does not share this sense of outrage, there is no doubt that the quality of education, and hence of learning, has dropped substantially in some Third World countries, and that young people in developed countries read and write their mother tongue less fluently today than about thirty years ago.

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Finally, the ability to promote development and to transmit traditional values. This doubt is voiced mostly in developing countries, and especially in previously colonized countries, where 'imported' models are often denounced.

The fact that the crisis is profound and takes on many forms does not make its financial dimension any less real. All over the world, Ministers of Education are no longer concerned, as in the sixties, with managing rationally to spend substantial and rapidly growing budgetary allocations. Rather, they are struggling to preserve the real value of their budgets, and are 'redeploying' their means and making savings, with a view to maintaining a minimum standard and satisfying social demand.

Now while the budgetary constraint has become tighter everywhere, it is more severe in the countries that have kept a system financed almost entirely from the public purse, than in those where private funding is relatively important [1].[2] It is also much more drastic in developing countries, and especially in the poorest amongst them, where priority objectives such as universal primary education cannot be pursued for lack of resources.

The first task is to acquire a good understanding of the real scope of the problem, by examining trends in the effort to promote education, in the various regions of the world, since the beginning of the sixties. Once the situation is known, one must come to understand the causes and to sketch out the consequences of the present financial crisis. Finally, it seems desirable to outline the possible solutions.

Trends in the effort to promote education since 1960

In order to know the level of priority given to education, it is not enough to observe the amounts spent. Neither is it sufficient to refine these measures by calculating flows in real terms, in order to eliminate the influence of price rises, or by dividing the total spent by the number of beneficiaries, that is, by calculating a cost per pupil. It is also necessary to have an idea of the effort committed to education.

Ideally, two indices should be calculated. First, the one that makes it possible to observe the fraction of its resources that the community devotes to providing the education service. This index of absolute effort is given by the ratio of the education expenditure to the community's total resources. But, whereas a measure of the latter amount is available in the Domestic Product, one does not generally know the total education expenditure, because the contribution of certain payers, and in particular that of households, is not provided by current statistics. As a result, in most cases one settles for putting only the public expenditure in the numerator of the ratio.

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[2] References are to be found at the end of this paper.

The other index is an index of relative effort. It aims at measuring the level of priority given to the education service by public authorities within the overall set of activities that they finance. It is given by the ratio of the education budget to the State's total budget [2].

Using data collected by Unesco, it is possible to calculate an absolute effort index for a large number of countries back to 1960. However, comparative calculations on the basis of the same source are more difficult for very recent years.

Consequently, we first examine trends in the absolute and relative efforts between 1960 and 1980, before indicating what is known about recent trends, and taking a closer look at the cases of several countries.

Trends in the public effort to promote education between 1960 and 1980

The ***absolute effort*** has evolved as shown in *Table 1*.

The trend since the crisis has clearly been different in developed and developing countries.

In the former, the strong growth characterizing the 1960-1976 period ended virtually in that year. The stabilization trend seems to have been more pronounced in Anglo-Saxon countries than in other countries with decentralized economies, and more pronounced in the countries of Northern Europe than in those of Southern Europe. We also note that the slowdown was not limited to decentralized economies, and even seems to have been a bit sharper in the socialist countries.

In the developing countries, there was relatively stronger growth of the effort between 1960 and 1970 than in developed countries (+42 per cent against +40 per cent), but a more pronounced downturn in the rate of increase of the effort between 1970 and 1974 (only +2 per cent against +8 per cent). But after the crisis, the effort seems to continue to rise quite steadily (+5 per cent between 1976 and 1980).

The immediate effect of the crisis seems to have been, in all countries [3], a rather marked increase in the effort (+5 per cent between 1974, the last unaffected fiscal year, and 1976, the first fully affected year, in developed countries; +12 per cent in developing countries).

At first glance, one might conclude that the education function continued to enjoy a very high priority. Indeed, funds are not reduced by as much in all government departments in a period of fiscal austerity. One tries to maintain, at least at previous levels, the expenditures considered most essential.

But a careful examination of the structure of expenditures by a Ministry of Education shows that they are, for the most part, difficult to eliminate in the short term. As Philip Coombs (Coombs, 1985) puts it: the

Table I: **Absolute public effort to promote education, by major region, 1960-1980 (Public education expenditure/GNP)**

Region	1960	1965	1970	1974	1976	1980
I. *Developed countries*	3.47	4.30	4.86	5.24	5.45	5.55
-Centrally planned economies	4.28	5.12	4.62	4.89	4.88	4.97
-Decentralized economies	3.21	4.04	4.94	5.35	5.63	5.74
-Western Europe	3.08	3.87	4.73	5.08	5.41	5.43
-North	3.43	4.15	5.30	5.86	6.18	6.20
-South	2.32	3.26	3.49	3.38	3.74	3.77
-Anglo-Saxon countries	3.69	4.70	5.92	6.44	6.40	6.33
-North America	4.14	5.66	7.70	6.88	7.11	7.28
-Japan	4.01	4.33	3.95	5.23	5.51	5.90
II. *Developing countries*	2.55	3.13	3.63	3.69	4.13	4.35
-Latin America/Caribbean	2.75	3.32	4.09	4.29	4.56	4.77
-Asia and Pacific	2.46	3.00	3.32	2.93	3.49	3.54
-Africa	2.50	3.11	3.56	3.86	4.35	4.70
-English-speaking Africa	2.40	3.69	3.73	4.13	4.53	4.93
-French-speaking Africa	2.31	2.94	3.57	3.70	4.04	4.48
-ex-French colonies	2.20	3.00	3.57	3.70	4.20	4.61
-Arab countries	3.01	3.39	3.93	3.59	4.20	4.28
-Oil-producing countries	3.05	3.64	3.88	3.22	4.08	4.09

Source: Our calculations from national data provided by Unesco's Office of Statistics.

The average ratios in the table are arithmetic means of country ratios.

pupils, the teachers and the buildings are there, and the teacher payroll (which often represents 90 per cent or more of the total budget [4]) cannot easily be reduced because of contractual or other commitments (p. 141). On the other hand, GNP suffers the full impact of a crisis, and can even fall drastically in countries where commerce is heavily reliant on the outside world. In this event, the total State budget increases as a proportion of GNP, and the most rigid budgets increase more. Therefore it is not unreasonable to conclude that this increase in the index does not really, or at least not mainly, reflect a real increase in effort, but rather a set of internal constraints.

Looking at relative effort makes it possible to fill in the picture given by absolute effort, and to confirm this hypothesis.

Table 2 shows how the relative effort has evolved.

Table 2: Relative effort to promote education, by major region, 1965-1980 (Education Budget/Total Budget)

Region	1965	1970	1974	1976	1980
Africa	16.6	17.7	18.2	18.4	15.6
of which :					
Sub-Saharan Africa	16.4	17.6	18.3	18.5	15.1
Latin America	18.7	21.2	17.7	17.8	16.0
Asia and Pacific	14.7	13.3	13.0	12.3	11.6
Western Europe	16.5	15.8	14.4	13.7	13.7
Other western developed countries	16.1	15.6	14.8	13.8	13.3

Source: Unesco's Statistical Yearbooks

Note: Except for the years 1974 and 1976, the averages were not calculated over the same number of countries. The number of countries for which 1960 data were available was too small to allow for calculation of the average.

One sees very clearly that education's share of the budget did not increase between 1974 and 1976. In fact, it tended to decline in the Western developed countries and in the developing countries of Asia.

But the most striking phenomenon is the reversal of the trend at the end of the seventies. Whereas the proportion devoted to education exhibited more of an upward trend at the end of the sixties, at least in the developing countries, it was clearly falling in the second half of the next decade.

The data must, of course, be interpreted with caution [5], but the proportion of countries where this decline is marked (more than 0.2 percentage points) is too high for this to be just a quirk of the statistics (10 countries of the 14 in Europe for which this trend could be monitored; 15 of 21 in Africa; 12 of 22 in Asia; 16 of 18 in Latin America).

Thus the aggregate data used to calculate these indices indicate, generally speaking, that the trend was very favourable for education in the sixties; at the beginning of this decade, education expenditure actually grew twice as fast as total communal resources.

This effort continued to rise in general, that is, expenditure continued to grow more quickly than total resources right up to the first oil shock. The increase in absolute effort indices between 1974 and 1976 tends to point to renewed confidence in education as a means to overcome the crisis. But we have seen that, with the possible exception of Africa, this was not in fact the case, with later developments confirming a downturn of previous trends.

Nevertheless, the fact remains that appearances show the absolute effort to promote education continuing to increase at the end of the seventies, and that the decline in the education share of government budgets, while noticeable, was not very pronounced. In fact, as we shall try to demonstrate, these global average indices greatly underestimate the downturn.

The downturn since the end of the seventies

The usual indices are more difficult to calculate for the various regions after 1980, because the number of countries answering Unesco's questionnaire is substantially smaller. Thus it has become dangerous to make comparisons, for reasons that we have developed at length in previous publications (Eicher, 1984 and Eicher, 1985).

Those that have been calculated by Unesco show the absolute effort continuing to increase in the developing countries (from 3.8 in 1980 to 4.1 in 1985 on average), but with a slight downward tendency in each of the sub-regions, except for the Arab countries.

For the developed countries, the stabilization trend is confirmed [6].

It seems to us that these data paint a picture of the profound evolution, characterizing educational systems over the last ten years or so, that is too imprecise and too biased to be acceptable as it stands.

The trends in the financial effort can be characterized more accurately by analysing individual data. The absolute effort was subject to a very sharp downturn in the majority of countries. Classifying countries into three categories, according to whether they increased their effort (by more than 0.2 percentage points), reduced it (by more than 0.2), or kept it more or less constant, yields the picture for developing regions shown in *Table 3*.

Comparisons between periods must be made cautiously, because the number of countries for which data are available varies, especially so at the end of the series. But it is very clear that increasing effort was more or less universal in the first period (82 per cent of countries). The stabilization trend is present already between 1965 and 1970, and becomes very noticeable in the period preceding the first oil shock, when only a minority of countries continue to grow, and a strong minority (34 per cent) decline.

The effect of declining resources after 1974 is to push up the apparent effort in many more countries because of rigidities; nevertheless, it is worth stressing that more than 20 per cent of these countries (where resources stabilize or even decline) reduce their effort, which represents a substantial decrease in the means made available to education.

Table 3: **Distribution of developing countries according to trends in their absolute effort to promote education**

Region	Period	Number of countries whose effort:		
		increased	was stable	decreased
Africa	1960-1965	36	3	3
	1965-1970	26	8	8
	1970-1974	21	13	8
	1974-1980	32	4	10
	1980-1985	12	4	16
Latin America and Caribbean	1960-1965	30	0	2
	1965-1970	20	10	2
	1970-1974	14	7	11
	1974-1980	22	5	6
	1980-1985	9	4	11
Asia and the Pacific	1960-1965	21	7	4
	1965-1970	17	7	8
	1970-1974	9	6	17
	1974-1980	20	7	9
	1980-1985	10	2	3
All developing countries	1960-1965	87 (82.0%)	10 (9.5%)	9 (8.5%)
	1965-1970	63 (59.5%)	25 (23.5%)	18 (17.0%)
	1970-1974	44 (41.5%)	26 (24.5%)	36 (34.0%)
	1974-1980	74 (64.5%)	16 (14.0%)	25 (21.5%)
	1980-1985	31 (43.5%)	10 (14.0%)	30 (42.5%)

Source: The basic data are taken from Unesco's Statistical Yearbooks.

After 1980, we again see the majority of countries maintaining (14 per cent) or reducing (42.5 per cent) their effort. This trend reversal becomes even more apparent after 1982. In Latin America, for example, of the nine countries that seem to have increased their effort between 1980 and 1985, there are six with no increase from 1983 on; of the ten Asian countries whose effort was greater in 1985 than in 1980, nine had reversed that trend as of 1983.

More recent information available through case studies shows that this trend is continuing. It can even be stated that, at present, only a small minority of countries are increasing their effort, while a strong majority are reducing it.

As to education's share of the total public budget, it is less today than what it was in 1976 in a majority of countries. Africa is alone in exhibiting an increase in this share in a majority of countries since 1980 [7].

Generally speaking, there are no major changes taking place in developed countries. The absolute effort is tending to remain more or less stable in most of these countries. As for the relative effort, it is on the decline in most cases, but not drastically. (In Western Europe, of the thirteen countries for which data are available, eleven reduced education's share of the public budget, but in ten cases the reduction was less than one percentage point.)

The conclusions to be drawn are clear: there has been a sharp reversal of past trends, in terms of both relative effort and absolute effort. This downturn is apparent across the board, but is linked more directly to the economic crisis in the Western developed countries [8].

The rather general decline in the relative effort seems to reflect a lower priority on education. But that of the absolute effort is less obvious. On the one hand, as we have seen, it can be affected, in a period of drastic growth deceleration, by the rigidity of the national education budget, and hence underestimate the real decrease in resources deployed (see 2nd part).

On the other hand, since the figures are budgets as voted, there is no guarantee that the numerator of the ratio represents the amount actually spent. Many observations made in the poorest countries, in particular in Africa, indicate a clear tendency not to spend the entire allocation as adopted, because fiscal revenues in the course of the year turn out to be well below budgetary forecasts. For example, in 1984 in Zaire, only 93.7 per cent of the adopted operating budget and 75.2 per cent of the investment budget were actually disbursed (in a depreciating currency). Between 1980 and 1985, an average of only three-quarters of the investment budgets were actually spent, and less than half the planned investment projects completed, because of monetary erosion. It is estimated that the latter proportion has fallen to 25-30 per cent since 1985 (Orivel, 1987).

But it must not be forgotten that, even in periods of prosperity, trends differ, sometimes markedly so, from one country to another. This can be explained in part by the particular circumstances prevailing in individual countries, and in part by political decisions that cannot be explained, or at least not fully so, by the circumstances. A quick review of several particular cases will make this clear.

Survey of the variety of circumstances and policies

Most developing countries allowed a more or less free [9] post-obligatory public education to grow in size, generally content, at least until the crisis, to keep up with demand by allocating the necessary funding. However, some of these countries had a distinctly different policy.

Japan was the first country to modify its education policy quite radically, in order to be sure of being able to continue to fund high-quality post-obligatory educational institutions from the public purse, while still improving the quality of obligatory education.

The solution consisted, on the one hand, in greatly liberalizing the conditions for opening a private school, while restricting access to upper secondary programmes, and especially to universities and other public institutions of higher learning; and on the other hand, in generating additional funding by requiring that pupils pay tuition fees.

The result is that, whereas the absolute public effort increased rather sharply before privatization (4.1 per cent of GNP in 1960, 4.4 per cent in 1965), the pressure on the public purse was alleviated when many private institutions were opened. Indeed, 960 private post-secondary educational institutions were founded between 1960 and 1980 (as compared to just over 100 public institutions [10]) (Kaneko, 1987).

However, in order to ensure a minimum teaching standard in the private sector, the government agreed to subsidize the private institutions as of 1972. Even though these subsidies cover no more than 20 per cent of the total cost, they partly explain why the absolute effort, after having fallen to 3.9 per cent of GNP in 1970, went back up to 5.5 per cent in 1975. This increase was also due to a rise in the unit costs of public education, for a major quality improvement effort was made in obligatory education, and scientific disciplines remained a virtual monopoly of the universities.

It was because of this last trend that public university tuition fees were increased in the seventies (reaching more than 13 per cent of the cost in 1980), while public funds disbursed per student declined in real terms.

The result of this policy is that Japan has succeeded in becoming one of the countries with the highest proportion of school graduates attending post-secondary institutions, while spending a much smaller fraction of its education budget on this level than other developed countries (just over 10 per cent against an average of more than 20 per cent).

The United States adopted almost the opposite policy. Whereas in 1950, private education at the post-secondary level in that country played a role roughly equivalent to the one it had in Japan, American policy was very much in favour of public education, which accounted for only 50 per cent of students in 1950, but almost 80 per cent in 1980. Moreover, private education receives larger public subsidies than in Japan. But American institutions, which enjoy a high level of administrative independence, chose to maintain and even to improve the quality of their services, when public subsidies started to stabilize in real terms.

This policy made it possible to compensate for the decline in subsidies per student, but it runs the risk of closing the doors of private institutions to candidates without scholarships or a very rich family. As a result, the United States has quite recently started to modify its public education promotion policy, but the changes have not been major.

As for France, it has chosen education funded almost exclusively from the public purse, since almost all primary and secondary private teaching institutions receive most of their resources through public subsidies. But the post-secondary education policy has changed profoundly since the middle of the sixties, and especially since 1968. The real allocation per student, which had risen sharply between 1950 and 1965 [11], actually fell by 38 per cent from 1965 to 1976, and has not increased since (Eicher, 1987).

The consequence was first a severe deterioration of the quality of university education, especially in recent years, followed by the creation of a wide variety of private, fee charging institutions.

Spain is yet a different example. It spends relatively little on education (only 1.8 per cent of GNP from public moneys in 1975). Since the death of General Franco, a considerable effort has been made, reaching 3.3 per cent of GNP in 1985, during a period when the trend in other European countries was to reduce the effort.

There is just as much variety of circumstances in the developing countries. To take just the example of Sub-Saharan Africa, one notes in general that the absolute effort continued to rise in most countries right up to 1980, and often up to 1982, and that education apparently remained a high priority in State budgets.

But some countries exhibit very different trends. For example, Nigeria reduced its absolute effort from 3.9 per cent of GNP in 1979 to 2.0 per cent in 1983 and 1.3 per cent in 1985, and its relative effort from 16.2 per cent to 9.3 per cent and then 8.7 per cent of the budget during the same period. With the budget dropping sharply in nominal terms, and with price increases exceeding 20 per cent per year during part of this period, it has been estimated that the rate of real annual average variation in public education expenditure was -9.4 per cent between 1974 and 1982, and -24.7 per cent between 1982 and 1987 (Orivel and Rasera, 1987).

At the opposite end of the scale, Zimbabwe significantly increased its absolute effort (from 3.6 per cent of GNP in 1975 to 7.2 per cent in 1982 and 8.1 per cent in 1985), and also, albeit less sharply, its relative effort (from 13.7 per cent of the budget in 1980 to 16 per cent in 1985).

Zaire has applied a dramatic reduction in education's share of the State budget since 1980: 24.2 per cent in 1980, 7.29 per cent in 1985 (actual expenditure) and 8.11 per cent in 1987 (projected expenditure), because of the magnitude of its debt repayments (Orivel, 1987).

Causes and consequences of the financial crisis

The serious financial crisis, experienced by most educational systems in the last several years, has primary causes rooted in the systems themselves, which made this crisis inevitable in the long term. But it was precipitated and amplified, to different degrees in different countries, by the general economic crisis. The shortfall of resources, in turn, created or amplified operational shortcomings, and resulted in changes, sometimes profound changes, in the demand and in the organization of supply.

Causes within the educational system

The school as we know it is organized in such a way, that it provides services at a cost per learner that grows with time.

In order to carry out its principal function – the imparting of knowledge – the school uses a combination of factors, among which qualified work (the teachers) plays a crucial role. There are two reasons for which the cost of this factor tends to rise:

First of all, the normal trend for teachers' salaries is upward, when there is economic growth, because they more or less follow increases in the national revenue. Then, it is generally argued by teachers, and accepted by pupils' parents [12], that the quality of education benefits from any decrease in the number of pupils per teacher, so that there is strong pressure to cut class sizes, which of course pushes up the cost of teachers per student.

Moreover, the cost of teaching assistants, buildings and (especially) land also tends to rise with urbanization and technological innovation.

As a result, the cost of teaching services tends to increase more quickly than demand. In developing countries, where the demand is far from having been satisfied, budget increases tend to be spectacular if attempts are made to increasingly satisfy this demand.

Finally, the cost of scientific research – another important function of higher education – also tends to rise with technological progress.

There is another phenomenon, observed more and more frequently, that tends to push up unit costs, namely declining return.

The return on education can be defined internally, from observation of objectives and their realization. If one restricts the concept to transmission of knowledge [13], the return is measured by actual cognitive acquisition compared to anticipated acquisition.

More and more voices are being heard in denunciation of the 'drop in standard' of pupils. If these assertions correspond to an objective reality, this means that fewer and fewer pupils are reaching the end of a programme of studies with the minimum knowledge deemed acceptable for the awarding of a certificate, or at least that more and more pupils are taking more than the normal time to reach this level. In both the first case and the second, the cost per graduate rises.

Defining the return externally, that is with respect to the ex-pupil's employment or social situation after leaving school, one again observes a considerable rise in the apparent dissatisfaction of employers. Here again, one can conclude that the cost of supplying an 'acceptable' worker is rising, either because one only takes into consideration those who succeed directly on the labour market, or because one adds to the cost of original training that of training given by the employer after recruitment in order to make the worker 'operational'.

But the financial crisis can also be attributed, at least in part, to external causes.

External causes

In virtually all countries of the world, education is currently provided through institutions controlled and financed, at least to a great extent, by public money. This means that revenue comes mainly from the State budget or from local communities.

Such revenue tends to stabilize and even to decline, either because the total budget is itself in relative decline, or because there is some doubt about the priority given to the education function.

The first factor has had an impact everywhere, with greater or lesser force, since the first oil shock. Public revenue has tended to increase less quickly than before in industrial developed countries, and even to decline in many developing countries. Despite the short-term rigidity of education expenditure, there has been an effect on this budget as well as on the others. But figures reflecting relative effort and its trends show that the second factor has also had an impact, especially since 1980 in developing countries, and more quickly in most developed countries.

This does not necessarily mean that there was a drop in the interest in education. For in developed countries, there were two functions whose needs grew strongly. On the one hand, departments responsible for stimulating economic activity and employment set up programmes that were costly to begin with, and became more so with time. On the other hand, the consequences of population ageing for social security disbursements (old age pensions, civil service retirement pensions) became more acute, just as the crisis was slowing down economic activity. As a result, the budget shares given to all other functions and departments were reduced.

But there are some countries, where doubts about the ability of the public training system, or of some of its parts, to meet the needs of the economy and society led to reductions in budgetary allocations to education. For example, it is this change in attitude to traditional higher education that explains, to a very great extent, the spectacular drop in the universities' share of France's education budget (from 17.4 per cent in 1969 to 10.4 per cent in 1979), and in real allocations per student (from 32,500 FF in 1964 to 19,600 FF in 1980). The same phenomenon, albeit less drastic, was observed in the United Kingdom at the beginning of the eighties. Higher education's per centage of the total education budget declined, in fact, from 26.6 per cent in 1980 to 21.7 per cent in 1984, and the expenditure per student from £3,275 to £3,060 in constant terms.

As for Africa, we recall the case of Nigeria referred to above, where the decrease was enormous with education's share of the budget declining by more than one-half between 1979 and 1983. That of Ghana is hardly different, with an absolute effort falling from 5.9 per cent of the National Product in 1975 to 1.5 per cent in 1984. The apparent decline of external effectiveness, as manifested by growing unemployment of graduates, certainly played a part in this reduction of the public effort in favour of education.

Asia, on the other hand, offers two contrary examples — China, which now gives a much higher priority to education than before, and India, which has just adopted a fundamental statute providing for a very sharp increase in the federal education budget.

But one thing is certain: wherever it took place, resource cutting had an effect, often a serious one, on the educational system.

Consequences of the financial crisis for educational systems

They first manifest themselves in the supply.

Reducing means normally affects the quality of the services provided. As far as commercial goods are concerned, this consequence is generally direct and proportional, but it is less automatic in the case of public goods in trusteeship. Teaching institutions, which often enjoy a monopoly, and whose staff members are civil servants or at least protected by an advantageous status, do not have a direct incentive to optimize utilization of resources. Their directors are not judged by this criterion, and there is a tendency to look on public resources as being free.

The effect of a budgetary restriction can nevertheless be, to begin with and as long as it is not too great in scale, to stimulate better utilization of available means. Moreover, teacher salary reductions, so long as they remain small in real terms [14], need have no effect on knowledge acquisition by pupils. The same is true of increases in the number of pupils per class.

But when the budget cut becomes massive, it cannot but have consequences for the quality of education. The deterioration is evident in a number of developing countries, in Africa in particular. Teachers whose real salaries have often dwindled by a half in the last five years, and are usually paid irregularly, tend to lose interest in their work, and even to spend a lot of time outside the classroom in order to ensure their subsistence by other means. Teaching assistants disappear completely, blackboards cannot be written on or there is no chalk anyway, and textbooks – whose importance has been demonstrated by numerous studies (Heyneman, 1981) – no longer exist, sometimes not even for the teacher. Buildings deteriorate, sometimes to the point of being unusable in the rainy season. Pupils have to sit three, and sometimes even four to a table and bench designed for two, when they are lucky enough not to be standing at the back of the classroom [15].

The consequences for knowledge acquisition are reflected in lower success rates in examinations. But the latter may also be the result of instructions to juries to be severe, in order to limit access to higher levels of the educational system. Consequently, direct measurement of acquisition in the basic subjects is indispensable.

Results of such measurements, carried out recently in the Congo and the Central African Republic, confirm the extent of the deterioration. In the Congo, the average mark in mathematics and French of pupils at the end of primary school was 9 out of 40, with 3 per cent of pupils obtaining the average. With an average of 12 out of 40, the Central African Republic's results were slightly better, but still very far from satisfactory. And when one considers that the new teachers in French-speaking Africa have less and less mastery of the teaching language, there is every reason to be concerned about the future.

This deterioration in the quality of educational services offered by the public sector is starting to be perceptible in some developed countries as well, especially at the higher education level. This is true of France, for example, where the investment budget is not sufficient to maintain real estate in good condition, so buildings are rapidly deteriorating, and where the operating budget no longer allows for organization of tutorials and practical workshops under acceptable conditions.

This deterioration of public supply has in turn stimulated the development of a private sector supply.

Many developing countries, in particular among the ex-colonies, had either prohibited or closely controlled private schools in the name of equality of opportunity. Since the crisis, a growing number of them have removed these prohibitions and/or relaxed the controls. This has resulted in many private, fee-charging schools being opened, especially in technical secondary education.

In Latin America, radical reforms were introduced in Chile in the mid-seventies, creating both subsidized private schools and fee-charging private schools, "which recover all their costs through tuition fees" (World Bank, 1986).

In Asia, Pakistan lifted the prohibition against private education in 1983, and the development of such education has been spectacular. In China, private language schools and private teaching, allowed since just a few years ago, are also flourishing.

In Africa, Kenya has encouraged the development of "harambee" schools, which now account for 40 per cent of pupils at the secondary level, and half of which are not subsidized by the State. Tanzania has encouraged private schools to open and grow since 1984, by allowing them to receive subsidies from district and municipal councils. In Cameroon, where private education was always a significant factor, enrolment at technical lycées, which had declined at the beginning of the eighties, has grown much more rapidly than in the public sector since 1983-84.

Some of these experiences seem to be successful, but there is a risk of a mushrooming of mediocre schools asking high tuition fees, and therefore contributing neither to the effectiveness nor to the equity of educational systems.

In the developed countries, where almost all education was dispensed by the public sector and a State-controlled and subsidized private sector, a very rapid development of private institutions, many of them not recognized by the State, is also taking place. The case of France is perhaps the most spectacular, for it is estimated that at present "there are about 100,000 students in private education in Paris (against 200,000 in the universities)" (Le Monde Campus of 7 July 1988), whereas the official statistics give a figure of only 35,000. Twenty applications to create schools, or new sections of existing schools, at the post-secondary level were submitted to the Paris educational authorities in the first four months of 1988. These schools are fee-paying, their success rates in official examinations are usually well below those of public education, and the value of the diplomas they award is not attested.

The last supply-related consequence affects the very poorest developing countries, which are delaying education objectives, in particular that of universal primary education. Whereas the Addis Ababa Conference of 1961 set the year 1980 as the date by which all children, with only rare exceptions, would attend school, not only are we still far from this goal in a significant number of countries, but some of them, in particular in sub-Saharan Africa, are actually slipping further away from that goal.

In 19 countries out of the 39 in the region, the present growth rate of primary education enrolment is less than the growth rate of the school-age population, which tends to bring enrolment rates down. In 13 of these countries, the total number of children attending school is on a downward slope.

This trend is not, in fact, limited to Africa, for it affects several countries in Latin America, such as Costa Rica and the Dominican Republic, and in Asia, such as Afghanistan, Bangladesh, Jordan and Vietnam.

However, this very unsettling trend is not due solely to the shortcomings of the supply.

The effect of the financial crisis on demand is also significant.

In the case of developing countries, surveys conducted in those countries where enrolment is falling show that families are becoming more reticent about education, and tend not to send all their children to school. They observe that the quality of education is deteriorating, that the probability of their children passing the entrance examinations to the next level is dropping sharply, and that education costs paid by families are on the rise, in fact if not by law. They also note the upsurge in graduate unemployment, and the end of automatic hiring of higher education graduates by the civil service.

Hence they reason in terms of human capital. Since the cost of the investment is growing and its return diminishing (while the risk involved is greater), the operation is becoming less profitable. Schools were viewed above all as a way of gaining access to white-collar jobs, well-paid and with high social status, but since this access is becoming uncertain and the advantages and prestige accompanying these jobs are sharply diminishing, families, which did not always appreciate the values transmitted by schools in any event, are turning away from education.

This trend reversal is not yet evident at the level of higher education, where the advantages accompanying student status are still sufficient incentive to the pursuit of studies, whatever the resulting opportunities may be.

In developed countries, on the other hand, it is often at this higher level that changes in demand are observed. In several countries (United States, Denmark, Sweden, United Kingdom and Japan in the universities), there was a slight drop in enrolment at the end of the seventies or the beginning of the eighties.

In other countries, one observes a rather profound change in student choices. In France, for example, enrolment in short programmes (IUT and BTS) grew by almost 50 per cent between 1980-81 and 1985-86, whereas enrolment in traditional university disciplines went up by only some 12 per cent; we have already drawn attention to the present explosion of private school enrolment figures. In Belgium, universities experienced an enrolment increase of barely 9 per cent between 1980 and 1985, while non-university post-secondary educational institutions saw their enrolments grow by 43 per cent. In the United Kingdom, as the universities lost students, the Open University enjoyed 14 per cent enrolment growth, and the other institutions 39 per cent.

The reduction in resources made available to universities must have something to do with this trend.

The consequences of the financial crisis prevailing in educational systems are profound, various and even worrisome, especially in developing countries. In some of these countries, the state of delapidation of the educational infrastructure has reached the point where one can reasonably ask whether it is still capable of properly fulfilling its functions. Therefore, it has become urgent to find solutions.

Solutions: consistency and constraints

In terms of principles, a reform of the structure of educational financing is necessary. But in practice, the priority actions pertain to the utilization of public funds on the one hand, and, on the other, the search for private financing if the framework of present systems is maintained and the exploration of the possibilities offered by new technologies if extensive reform is accepted.

The basic principle: the need for reform in financing

Financing modes must be modified, for both a practical reason and a logical reason.

The practical reason is that needs cannot be met with the present financing.

In the short term, governments of the poorest countries, those in sub-Saharan Africa in particular, are incapable of maintaining enrolment rates at their present level, while still providing a service of acceptable quality. The future of these countries' educational systems is in danger, because even those pupils who graduate from secondary school have an academic standard that makes it difficult for them to pursue normal higher education, above all because of insufficient proficiency in the language of instruction.

In the longer term, it is also clear that nowhere will it be possible to keep up with rising expenditures. Demand is increasing, at the end of obligatory schooling in developed countries, and at all levels in other countries [16]. Unit costs for the same quality tend to grow. Since a ceiling on the proportion of national resources spent publicly on education seems to have been more or less reached, and since other services are being given rising priority in State budgets, it is difficult to see how, on average, governments can keep up with demand, as they did in the sixties and, not quite as well, the seventies; *a fortiori* it is difficult to see how the backslippage of the last few years can be made up, to restore the indispensable level of quality.

The logical reason is that entirely public funding of education is justified only in exceptional cases, and hence it is natural to make users pay part of the cost.

Education is not a purely collective commodity. In fact, except in those very infrequent cases when there are vacancies in all institutions, it does not respect the principle of non-exclusion. At the other extreme, education cannot be a commercial commodity, for it may be presumed that its provision by market mechanisms would not lead to the social optimum.

Several reasons for this can be invoked:

To begin with, it is a commodity that has positive external effects. Individuals who are not directly concerned also 'benefit' from the education given to young people. This applies, of course, to their parents, who are proud to see their children well educated, or who hope that a child's diploma will result in social advancement for the entire family.

But the positive effects extend beyond the family circle. It has been shown that criminal activities decline when the average level of education rises in a group; all non-criminals benefit from such a change. It is also evident that an individual who knows how to read and write can render services in a community of illiterates.

As a result of these positive external effects, if each individual were to pay for his own schooling, there would be an under-investment in education, since no-one would take these collective advantages into consideration, all the more so since many of them are indivisible.

In the second place, it is a commodity whose effects are poorly measured by education seekers, who do not have sufficient information, all the more so in that some of these effects occur in the future and are not appreciated in the present. For example, the advantages to be gained from information received at school about history and geography, or art history and political institutions are likely to escape the adolescent attending a secondary school, although they will be understood by the future adult.

In this case, the community is called upon to play the role of tutor, and to decide for students what is good for them. But it cannot force them to pay for a commodity they did not ask for, and hence it must subsidize education, in order that the required number reach the level considered desirable.

Finally, education as a commodity is generally viewed as being different in quality, if it is offered publicly rather than by profit-oriented private institutions, if the teaching is based on a single concept and organization, rather than programmes and curricula varying from one school to the next.

All these reasons speak in favour of public control and public subsidies, but not in favour of entirely public funding, except in two extreme cases:

First of all, when families recognize the benefits of education, and very much want their children to go to school, but are so poor that they absolutely have to apply all their resources to fulfilling their basic needs (food, clothing, shelter). The government of such a poor country may then decide to provide education free of charge, but it is difficult to see how it would find the resources, except perhaps through foreign aid. If only part of the population is in these circumstances, the appropriate solution would be individual assistance, rather than free education for all.

The other situation in which free education may be appropriate is temporary and specific in nature. It has to do with training in specialities with an acute shortage of graduates, and which are considered to be essential for continuing economic growth or for the country's renown. In both this case and the previous one, one can even accept a broad definition of free education, that is, not just absence of tuition fees, but also compensation for other expenses connected with studies, and for pupils' loss of earnings.

It is logical, then, that education be funded on a mixed basis, with both the beneficiaries and the community making their contributions.

But that does not solve the problem in itself. On the one hand, this rule does not tell us what contribution the beneficiaries should pay in each particular case. All it says, at best, is that the greater the community's interest in training, because it has significant positive external effects, or because families are particularly badly informed about its advantages, or because it seems indispensable for continuing growth, the greater the share it should contribute. It may well be that this share should correspond to the direct cost of studies, and hence that free education in the narrow sense is appropriate. At the opposite extreme, only education of no specific interest to the society should be financed in full by the beneficiary, like any other consumption goods.

The other unresolved question is that of the practical applicability of the chosen solution, even when it is a rational one. The strength of student movements inspired, at least in part, by the intention of certain European governments to raise tuition fees moderately shows very well that there can be insurmountable short-term obstacles to some financing reforms. This is why, in so far as public resources are concerned, priority should be given to better utilization rather than reduction.

Changing the means and rules for utilizing public funds

Two basic questions have come to require urgent answers since the financial crisis undermined the effectiveness of educational systems: if public funds have to be reduced, which expenditures should be reduced first, and to which levels and/or disciplines should cuts be applied?

These questions are all the more pressing because savings have not so far been applied equally to all items. If one takes the point of view of the various means to be implemented, we have seen that it is very difficult, in most countries, to reduce salaries, both because teaching positions are often protected by a special status, and because individual salaries are determined on the basis of a grid that applies, in many cases, to the civil service as a whole, and whose modification would encounter virtually insurmountable obstacles. As a result, there is a tendency first to cut back current operating expenses and investment budgets. These sharp cuts in some items often have directly observable negative consequences, such as degradation of buildings and equipment, absence of the most common teaching assistants, etc. They undermine the effectiveness of the combination of means used to achieve the educational objective.

In the traditional system, education requires a teacher and some physical resources, put together with a certain number of pupils. The result depends on the quality of the teacher, on the number of pupils per teacher, and on the quantity and quality of the other inputs. Therefore, it is crucial to know where to cut budgets with the least possible negative effect.

Internal cost-benefit ratio evaluation work, carried out over the last few years (Mingat and Tan, 1987), shows that, per dollar spent, the effects of teaching material expenditures are much more significant for knowledge acquisition than reducing class size, and even more so than improving teacher qualifications.

It may be supposed that the same relationship applies in both directions, but it is important to carry out measurements in each specific case, in order to avoid threshold effects. For example, while it seems clear that increasing the number of pupils per class from 30 to 40 does not have much negative effect on knowledge acquisition (Haddad, 1978), it is not obvious that this remains true as one goes from 70 to 80. Similarly, while a teacher need not have studied four years at the post-secondary level to teach primary school properly, there is some level below which it is not reasonable to fall. Nevertheless, it is important to understand that recruiting assistant teachers rather than teachers in French-speaking Africa would be a measure with a much more favourable cost-benefit ratio than, for example, eliminating the distribution of school books [17].

Adopting the point of view of different levels, one is struck by the enormous difference in cost per student between the primary and post-secondary levels in developing countries, especially in Sub-Saharan Africa. Considering that a post-secondary student costs an average of 80 times more than a primary pupil (against about 8 times in Latin America and in Asia, and only 3 times in Western developed countries), it is clear, on the one hand, that the number of places available in primary schools could be increased greatly by transferring just a small proportion of the post-secondary budget to that level (Mingat and Tan, 1985), and on the other, that it seems somewhat unjust to contribute so much to so few students, and so little to so many primary pupils.

But reorganization of resource allocation within the national education budget is not enough to solve all problems, even in conjunction with better management of funds. External resources must be increased.

Developing new sources of funding

According to the reasoning advanced by theoreticians of public economics, the share of a cost borne by the community depends on the importance that it attaches, through its representatives, to the given commodity. Hence there is no reason, as demonstrated above, why public funding should be the same at all levels of the system, and for all disciplines at the highest levels.

As soon as obligatory basic education is in place, the only way, strictly speaking, of being sure that all families can take advantage of it for their children is first to offer places near every household, and second to make such education completely free for all. Being free of charge should even be understood in the broad sense of the term, that is, one should be certain that no family will have to bear additional expense, and that no family will lose resources through loss of earnings. If this is not the case, then there is no guarantee that the resulting financial obstacle will be overcome by the very poorest.

From another point of view, it seems natural not to add a financial burden to the constraint of obligatory school attendance.

In developed countries, that is more or less the situation. To be sure, families are not compensated for loss of earnings of school-going children, but it can be argued that such loss of earnings is inexistent, since, in order for there to be an opportunity cost, there have to be alternate solutions. With families obliged to send their children to school up to a certain age, and with employers prohibited from hiring juvenile workers, there are no such solutions.

The situation in developing countries is different, because obligatory schooling is more a wish than a reality, as the public authorities are unable to fulfill the first condition, that of providing enough places to ensure effective access for all. Moreover, the level of development and the customs are still such that young children often contribute to productive activities, and hence there is an opportunity cost. But it is unthinkable, given the present financial situation, to extend the concept of free access by paying families compensation for loss of earnings. In any event, it can be assumed that families reason in terms of cost and return, and are prepared to accept loss of income in the present in exchange for anticipated future revenue. However, it would be difficult to find principles justifying payment of tuition fees in public primary schools.

There are, nevertheless, two possible ways of lightening the financial burden and providing for quantitative and qualitative development of primary education.

First of all, systematic recourse to community financing of at least part of the expenditure, other than teachers' salaries. This solution has already been adopted in many countries. For instance, parents in French-speaking sub-Saharan Africa participate, to varying degrees, in the construction and furnishing of school buildings.

This practice has the advantage of relating effort directly to results that benefit children, of mobilizing local communities, and of combatting the attitude that consists in expecting everything from the State.

The other solution is to open private schools. It is often criticized in the name of equality, for it is considered shocking to have schools 'for the rich' and schools 'for the poor'. It is easy to answer this argument by pointing out that these rich pupils will free places in public education, making it possible both to educate poor children otherwise not able to attend school, and to improve the quality of existing places, by allocating part of the funds for new classes to them. One can also point out that 'the rich' find ways of giving their children a better education even in an exclusively public system (private tutoring, schools abroad, etc.). Therefore, it is possible that allowing private schools to open may enhance equality, by improving the service available to the poor.

At the secondary level, a distinction should be drawn between general education and technical education.

In principle, general education no longer encompasses the entire age group after the end of obligatory schooling; but it contributes to basic education and does not prepare pupils for a profession. Hence the principle of free education would seem defensible, at least in developed countries, which need large numbers of young people with higher levels of qualification. But, for the same reasons as in the case of primary education, the development of institutions financed largely by local communities, and of private institutions can be recommended. One may follow the example of apparently successful programmes, such as the harambee schools in Kenya, which are attended by a significant proportion of secondary level pupils (World Bank, 1986), or Zambia's 'self-help schools' (World Bank, 1988).

Technical education has a well-defined vocational goal. This is why its promotion has often been recommended over that of general education. But it costs much more per pupil than the latter type, so the implementation of these suggestions is doubtful under the present circumstances [18]. Moreover, observations show that its graduates do not generally find employment more easily than those of general education.

The private fee-charging institutions option, frequently encountered in developing countries (at least for tertiary specialities), does not seem to be the best one, neither from the effectiveness point of view, because of the often poor quality of teaching, nor from the equality point of view. On the other hand, participation by enterprises in curriculum definition as well as financing would result in both a potential improvement in employment prospects, and in savings for the State. The example of the Federal Republic of Germany is certainly worth studying in this respect.

The issue of higher education is quite different. To begin with, it is more specialized and encompasses disciplines whose social interest can be legitimately viewed as unequal, and which should therefore, for reasons of principle, be funded unequally by the public purse. Two types of solutions have been applied to this issue. The one adopted by Japan, for example, consists in offering, in the public institutions, only those disciplines seen to have a high social priority, either free of charge or with low tuition fees, the other specializations being offered by private institutions, where the fees are high and public subsidies low or non-existent.

The other solution consists in setting different tuition fees by discipline within the same institution. This is the system prevailing in Swiss and Spanish universities, for example, but at present the fee differences are a function of the cost of the studies, rather than their social utility. It seems inherently less easy to implement than the preceding solution, because it involves frequent changes in the fee amounts, as a function of the economy's needs.

Higher education is in any event reserved for a minority. Even in the countries where it is most extensive, such as the United States and Japan, the probability of gaining access is still very closely connected with social class. In the poorest countries, these differences are sharper, and are tending to become even sharper, for only a few per cent of each age group reach this level [19]. Under these circumstances, it is easy to demonstrate that tuition-free post-secondary studies are both ineffective, because absence of fees is not enough to attract the best students, and inequitable, because they amount to subsidization of the rich by the poor [20]. Tuition fee increases, in those countries where they are still nominal, seem inevitable, despite strong resistance from organized student groups. They would have two desirable effects, in fact, apart from that of lightening the State's financial burden. They would give students more responsibility, with an incentive to finish their studies more quickly, and to make greater demands on their institutions and their lecturers. They would give more management flexibility to the universities, which could use these resources at their discretion.

However, raising fees would require a careful revision of student aid systems, with a view to avoiding a negative impact on equality. Such reform is particularly urgent in the countries of French-speaking Africa, where it is often still the case that various bursaries and subsidies are distributed to all students, allowing them to pay for the necessities of life, and often more, during their studies. This is changing here and there, but not quickly enough and not everywhere.

Participation by enterprises is also desirable, for the same reasons as those invoked in the case of technical education. In the developed countries, support should also be sought from local communities, especially for the creation of decentralized university campuses, and from patrons.

While these new forms of financing can and should contribute to overcoming the financing crisis, the application of new forms of teaching can also help by bringing costs down, under certain conditions.

Applying modern teaching means

The upward trend of unit costs in the educational systems we know [21] is confronting public authorities with a catastrophic alternative, when demand is rising and resources stagnating or diminishing. Either they try to keep up with demand, which forces them to allow quality to decline to an extent that can be disastrous; or they insist on maintaining more or less the same quality, which forces them to ration places.

Moreover, such a trend would cause difficulties sooner or later for all governments, even in the absence of a crisis, because it involves the consumption of a growing proportion of public funds, unless there were to be a sharp drop in fertility and in the demand for post-obligatory schooling.

Thus it is natural to think about less costly ways and means, all the more so since technological progress seems to make it possible to reduce unit costs in almost all productive sectors, and since doubt is being cast on the effectiveness of the present school system.

When major innovations appeared in the field of communication, collection, transfer and processing of information, it was quite natural to think of applying them in the education sector. A lot of hope was first invested in audiovisual means, but it is now admitted that their application was generally a semi-failure, at best. Since the appearance of the New Information Technologies (N.I.T.), their proponents have argued that they should revolutionize teaching, making it possible both to reduce the cost per learner, and to improve considerably the effectiveness of educational actions. Observation of the facts leads us to the following conclusions:

(a) The cost-effectiveness balance of implementation of audiovisual means is, in most cases, negative in traditional education. There are two main reasons for this: these technical means were introduced in addition to teachers, so they pushed up costs; they were superimposed on classical education, whose methods remained unquestioned, so they improved quality only slightly.

(b) There are experiences of developing countries with an apparently favourable cost-effectiveness balance. But the results of assessments can be challenged (Wagner and Kemmerer, 1986), or it can at least be argued that the balance should be revised downward.

(c) The only cases where audiovisual means have yielded satisfactory results involve distance teaching, in which the at least partial replacement of teachers by machines is possible, allowing for a cost reduction. This clearly shows that one cannot place much hope in these instruments, when pupils are not sufficiently old to be fairly independent. On the other hand, experience shows that the cost-effectiveness ratio of using 'minor media', such as radio, which are relatively inexpensive, can be very favourable for an adult public, in an extra-scholastic setting, and even for academic distance education at the secondary or university level.

(d) The practical results of N.I.T.s are much less spectacular than their optimal effects, as described by those who would defend them. These optimal effects can be achieved only with hardware and instructional software not generally available in institutions, and only provided the teaching is designed and organized around the N.I.T. potential. Their introduction drives up costs (the cost of installation, maintenance, running the hardware, re-training teachers, construction or modification of buildings), which is not generally accounted for in a priori evaluations.

(e) As a rule, N.I.T.s have a zero (or at best slightly positive) cost-effectiveness balance in schools in developed countries. They result in both rising costs and cognitive acquisition improvement (Levin et al., 1986). Therefore they cannot be counted on for cost-per-pupil reductions.

(f) In order to be used effectively, N.I.T.s require physical conditions that are not available in poor countries (regular supply of electricity at constant voltage, ventilated rooms with good security, maintenance technicians, etc.), except perhaps at the universities.

(g) On the plus side, N.I.T.s are a solution of the future for distance training, especially in technical subjects. They allow for partial shifting of the financial burden to learners, who buy their own micro-computers and sometimes the instructional software as well.

All in all, it can be concluded that these new teaching means are not a current solution to the financial crisis, and that it will be difficult to use them effectively in poor countries, even in the medium term. For these countries, it is much better to look for local solutions based on peer teaching.

Conclusions

Today's financial crisis of educational systems is a reality everywhere. Possible solutions for developed countries involve increasing participation by families and enterprises at the highest levels of the system, and, in the longer term, moving some training outside institutional walls by applying new technological means.

In poor countries the immediate future is more sombre. Better management of resources, extension of private education, and reform of university and student aid funding are all necessary and urgent. But international assistance will be indispensable, and will have to be extended in the years to come, if there is a desire to keep the school systems of certain countries, on the African continent in particular, from collapsing.

References

[1] One should be careful not to confuse private funding with private sector. There are countries where private schools teach a non-negligible proportion of pupils, but are very heavily subsidized by the State in the main. On the other hand, there are countries where public institutions, especially at the higher education level, receive a substantial part of their resources through private contributions (tuition fees and/or donations).

[2] Strictly speaking, this is true only in centralized systems. When responsibility for education is mostly in the hands of provinces, totals have to be added up at this level, of course. Such calculations raise many problems, apart from those mentioned above. For a review of these difficulties and how to resolve them, see Eicher (1984).

[3] With the exception of socialist countries, which were not directly affected.

[4] Coombs is referring here to operating budgets, and is thinking primarily of poor countries.

[5] The results given in our 1985 study for Unesco (Eicher, 1986), which covered a smaller number of countries because of data availability at the time, differ substantially from those in *Table 2*, at least for Africa.

[6] We find these figures too unreliable to be reproduced here, partly because of the sampling problem already mentioned, and partly because there is no explanation about how the averages were calculated. The interested reader is referred to Unesco's 1987 Statistical Yearbook, pp. 2-36.

[7] But some countries, such as Zaire (see below), stand out because of a spectacular drop.

[8] Trends in the European socialist countries and in the USSR, as reflected by Unesco's statistics, seem more difficult to interpret, because the trends differ greatly from one country to another.

[9] Free education is generally defined as absence of registration and/or tuition fees. But it must not be forgotten that higher studies always involve loss of earnings, and additional current living expenses in most cases as well.

[10] It should be noted, however, that private institutions occupied a relatively important position even before the liberalization policy. They already accounted for 57 per cent of students in 1950.

[11] While remaining far below the average in industrialized countries.

[12] Even though evaluations of the effects specific to this variable on pupils' knowledge acquisition do not show very significant effects in the 20-40 pupils per class zone (Haddad, 1978).

[13] The problem of an educational system's objectives and of evaluating results is not simple, in fact. These objectives are actually partly in competition (for example, the more money is spent on research, the less there is available for teaching), and partly complementary (the more research is done, the higher the quality of university teaching). Moreover, some of them (for instance, socialization of children or transmission of the society's values) are very difficult to measure.

[14] And to begin with, it may well be a question of stopping the annual increase to which one has become accustomed.

[15] The situation as described has become rather common in sub-Saharan Africa (wherever parents are not prepared to bear the cost of textbooks, tables, benches, notebooks, etc.).

[16] The declines noted here and there are purely circumstantial. They have to do with a drop in the quality of public education, and also with dwindling employment opportunities. But the economy's need for qualified individuals is constantly growing. Thus the trend is one of strong school attendance growth.

[17] One interesting example is Burkina Faso, where such an experiment was conducted (World Bank, 1988).

[18] For the poor countries, one might of course imagine recourse to foreign aid for construction and equipment of institutions. But their per-pupil operating cost is also much higher than in general education, partly because of a better student-teacher ratio, and partly because of expenses connected with practical workshops.

[19] Just after independence, access to secondary and higher education depended primarily on academic standards. At present, partly because of the deterioration in quality of education, against which wealthy urban families have some recourse, and partly because of the new social structure that is developing, opportunities are becoming more and more unequal as a function of social origin.

[20] The debate on thiis point, which started with the publication of the Hansen and Weibrod study on the United States (1969), is far from over (Blaug, 1982). But in most countries the scales are definitely leaning towards the thesis advanced here.

[21] To be sure, there are possibilities for achieving economies of scale at the technical and higher education levels, but they are limited, even in developing countries.

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The financing of education: impact of the crisis and the adjustment process

Claude Tibi[1]

Introduction

The crisis in the financing of education, which particularly affects those countries least developed and most in debt, is due to a complex mix of factors, some of which were in existence before the economic crisis of the 1980s, others derive from it and yet others are related to the very rapid expansion of education systems since the beginning of the 1960s. The combination of factors and their importance varies considerably, however, according to the different countries, and the overview which follows is necessarily global and schematic in nature.

Amongst the internal factors, mention may be made of:

- the secular increase in unitary costs brought about by the long-term trend for salaries to increase in real terms whilst the productivity of teachers remained unchanged. In the medium term, this trend is strongly offset by the consequences of the adjustment process;
- the increase in total costs brought about by the dynamic increase in demand for access to secondary and higher education, the unitary costs of which are significantly higher than those of primary education;
- the cost of grants and financial assistance to students in higher education in most countries in Africa, and the high numbers of those who benefit;
- inefficiencies in the ways resources are combined; and
- the low level of returns.

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The situation resulting from these structural causes is made worse by a chronic under-utilisation of resources in public education: ineffectual usage of budgetary credits, existence of a total surplus of personnel in relation to needs, inefficient distribution of personnel and of other resources amongst teaching institutions. A complex mix of factors (forces, constraints, rules and regulations, budgetary procedures and distribution of resources, general culture in the administration) thus contribute to the low level of performance achieved in the public sector.

Amongst the *external causes*, we need to emphasize:

- the maintenance of strong demographic growth in most countries;
- the lowering of financial capacity brought about by the crisis, the growth of public debt service charges and the adjustment process;
- the lowering of financial commitment due to a questioning of the role of education in development (unemployment of graduates, escalation of qualifications, growing inequalities) but also to a lowering of capacity for financing. At the same time other factors exert pressure in the opposite direction (expanding social demand, power of pressure groups, doctrine of universal, free, basic education).

The immediate manifestations of the crisis relate to the allocation of resources to education and to the internal allocation of resources (by level and type of education, by type of expenditure, between formal and non-formal ...); in the long term the most serious consequences relate to the supply of and demand for education. With regard to the public sector, the quality of education is tending to decline as real salaries of teachers decline, which may have very serious consequences in the longer-term, and as pedagogical expenditure is lowered. Growing restrictions may also become manifest in the public supply (admission to secondary and higher education, for example). Globally, the demand for primary education is in decline in a number of countries. In all probability, this phenomenon affects mainly children from less fortunate home backgrounds, where incomes are affected both directly and indirectly by the adjustment process. At the present time, however, it is impossible to determine the relative role of the different explanatory factors (growing weight of the direct cost of schooling in households' budgets due to an increase in the charges to be borne by families and/or a reduction in their incomes, reduced openings available, rejection of the values transmitted by schools), to analyse the choices made by families (withdrawal of children from school as related to school failure, sex, age, place in family) and to evaluate the extent of the diminution by categories of households: the social consequences of the adjustment process are only just beginning to be studied at the micro-economic level.

We shall confine ourselves, in this paper, to a discussion of the mechanisms by which the economic crisis and the adjustment programmes affect the allocation of resources to education and the internal allocation of resources within education. We shall then examine the totality of factors which culminate in an inefficient utilisation of resources within public education; our emphasis will be on management problems.

Chapter 1

The economic crisis and its consequences for the allocation of resources to and within education

1.1 The crisis and the allocation of resources to education

1.1.1 Global analysis

Study of the process of the allocation of resources to education presupposes that one takes into account the roles of actors and the relationships that exist between them, the totality of education and training matters and the whole of the resources (public and private, internal and external) allocated to education. Moreover, the allocation of public resources to education must be set within the wider context of the global process of allocation of public resources.

In this paper, we shall examine mainly the public sector and certain of the characteristics of the *global process of allocation of public resources* in a period of crisis. We shall reason in terms of *supply of and demand for resources*, but in concentrating mainly on the technical aspects of the process because within the scope of the present document it is impossible to analyse the roles and effects of actors, the nature and urgency of the demands which they make on resources, the spread of the options available to the decision-makers.

The supply of resources for the whole of the public sector is determined by the *State's capacity for financing*, which depends on a series of factors and constraints:

- Evolution of economic activity and impact of the crisis, in particular through the intermediary of international exchanges.

- Consequences of this evolution for public revenue, taking into account the fiscal base, the progressive or regressive character of direct and indirect taxes, and their rates of recovery.

- Capacity for mobilisation of non-fiscal resources by the State (internal borrowings, calls on the Central Bank, external loans, external aid).

- Size of reimbursements to be made under the heading of internal and external public debt (taking into account possible variations in rates of exchange and interest rates as well as possibilities for rescheduling the debt).

This global financing capacity has been affected in recent years by the world crisis which has brought about a contraction in international exchanges, an increase in debt service charges, a worsening of loan conditions linked to the effecting of structural adjustment plans and the rescheduling of debts, a reduction in public aid for development.

The level attained by the budgetary deficit in some countries has obliged them to make a drastic reduction in their level of public expenditures and makes it very difficult to achieve an alleviation of the debt burden.

In those countries which have introduced direct or indirect taxes earmarked for education, we can refer to an *education-specific financing capacity* (although this only covers a part of the public resources which education enjoys) and it may be useful to analyse the specific evolution of these receipts and the possible impact of the crisis (cf. for example, education salary in Brazil, tax on salaries paid by firms and allocated to the financing of professional training, earmarking to education of a specified percentage of the State's current receipts, in Brazil and in Colombia, etc.).

Analysis of the *global demand for resources* and its evolution in a period of crisis is much more difficult to carry out because of the diversity of the sectors making demands, the multitude of choice criteria, and the differences in the power positions of the principal decision-makers. If it is possible to analyse, *ex post facto*, the evolution of budgetary credits and expenses in real terms for each sector, by type of expenditure and possibly by territorial unit area, it is still very difficult if not impossible to study the extent of the reductions carried out in relation to the sum of initial demands (leaving on one side possible reductions already encompassed within the initial demands) and to determine the factors and pressures which have contributed to such choices. In this connection it would be useful to draw up a statement of the works already completed in this field, at the level of the whole of the public sector expenditures and by sector. From an analytical point of view, it is useful to introduce here two distinct concepts:

(a) That of *irreducible expenditures*, which include all those expenses in respect of which the State has a *commitment* (cost of salaries of civil servants, transfer expenses determined by laws and regulations, capital expenditures relating to decisions already taken, etc.). It is however necessary to note that if *these expenditures are irreducible in nominal terms, some of them may not always be so in real terms* : measures taken to deal with the crisis and reduce the budget deficit have generally brought about a significant reduction in the purchasing power of civil servants through the combined effect of inflation and delayed and limited readjustments of salaries. Analysis of the real impact of this reduction on public expenditures is however difficult and must take into account the *real* evolution of public resources. Moreover, there also exist *other measures which enable the irreducible to be limited in the immediate or longer-term*, in order to bring into equilibrium the supply of and demand for resources in a period of budgetary tension: measures to encourage voluntary departure or retirement, without the personnel being replaced, cancellation of vacant posts, closure of teacher-training colleges and/or reduction of admissions to these establishments in order to reduce, in the longer-term, the number of trained teachers and their relative weight in budgetary negotiations, freezing of salary increases due to length of service, recruitment of non-qualified staff, freezing of non-salary credits in current prices, the bringing into effect of budgetary procedures intended to make more difficult, if not impossible, the utilisation of credits, etc. We should mention that in some countries structural adjustment plans envisage the licensing of persons employed in the public service but who are not in general civil servants.

(b) That of *expenditures which are not negotiable* or not to any great extent, which include in particular, depending on the country, defence expenditure, maintenance of law and order, etc.

The *interplay of the supply of and the demand for public resources* therefore operates essentially on those resources which remain available once there have been deducted from the financing capacity the irreducible expenditures, non-negotiable expenditures and the reserves which those with financial responsibility often maintain in order to be able to meet any reduction in receipts or unforeseeable increase in expenditures (see Appendix I). It is essentially at this stage that the interplay of priorities between sectors takes place and *the concept of financial will* becomes relevant. In the absence of a statement of the influences on the principal factors and the forces which influence the State's financial will in the various sectors, we have to limit our analysis to the education sector, which prevents any discussion of the *possibilities and limits for reallocation of resources between sectors.* We should add, however, that in countries where inflation and other factors (see Appendix I) lead the public authorities to prepare several additional budgets, a consequence of this procedure is that a significant proportion of the resources which will finally be mobilised

Table 1: Central administration receipts and expenditures (as percentage of GNP)

		Total ordinary receipts		Total expenditures		Global excess/deficit		Servicing of public debt	
		1972	1985	1972	1985	1972	1985	1972	1985
1.	Low income countries	13,8	15,6	18,0	20,3	-4,6	-5,3	1,5	2,9
2.	Intermediate income countries	18,0	22,7	19,6	23,4	-2,8	-3,5	1,6	5,7
	- lower band	16,5	20,9	19,4	24,8	-3,3	-4,0	1,7	5,7
	- upper band	18,7	23,6	19,7	22,7	2,5	-3,3	1,5	5,7
3.	Industrialised countries with market economies	22,1	24,5	22,9	29,1	-1,6	-5,4	-	-
Developing countries		17,5	21,1	19,3	22,3	-2,9	-4,3	1,5	4,3
of which :									
petroleum exporters		15,9	24,8	16,9	26,4	-7,6	-4,0	1,7	5,9
of which :									
exporters of manufactured products		18,8	20,9	18,7	20,1	-0,7	-3,7	1,2	2,7
Countries heavily in debt		16,6	20,8	17,8	20,8	-2,4	-4,4	1,6	5,1
Sub-saharan Africa		14,2	19,3	16,4	23,7	-3,1	-3,3	1,2	4,8

Source : World Bank - Washington D.C. June 1987.

does not come within the framework of the initial budgetary negotiation. This fact does not increase the State's global margin for manoeuvre but may enable certain ministries to call into question the initial allocation of resources.

In total, the public debt servicing cost has grown to reach a size where, in some countries, it is entailing a reduction in real terms in other expenditures. According to one study of 15 developing countries, mostly heavily in debt (Hicks, N.L., 1988) the largest reductions have related to capital expenditures (investment projects), then, amongst recurrent expenditures, purchases of goods and services, whilst the total salary cost was reduced the least. By function, defence expenditures were the least affected; those relating to productive services and especially infrastructure were most affected, whereas the social sector was affected to a rather less extent than the overall average.

With regard to resources, we may note a progressive but definite increase in ordinary receipts as a percentage of GDP and, in many countries, a relative increase in the budgetary deficit (*Table 1*).

1.1.2 The specific process of allocation of public resources to education

This may be represented as shown in *Figure 1*.

Amongst the factors which affect the State's willingness to allocate resources to education, we may in particular cite the following (Lewin, K., 1987):

- Factors tending to reduce the priority given to education: increase in the number of recorded unemployed, migration of manpower, escalation of qualifications not related to aptitudes required for employment, lowering of the quality of education and of the importance attached to educational diplomas, growing inequalities in the supply of education, uncertainty regarding education's contribution to productivity.

- Factors tending to increase the priority given to education: expansion of social demand connected with demographic growth, persistent shortage of manpower, power of pressure groups and doctrine of universal basic free education.

If there is no doubt that all of these factors play a part in influencing the State's willingness to grant resources to education, it seems to us important to try to prioritise them and to concentrate on whichever are the most important.

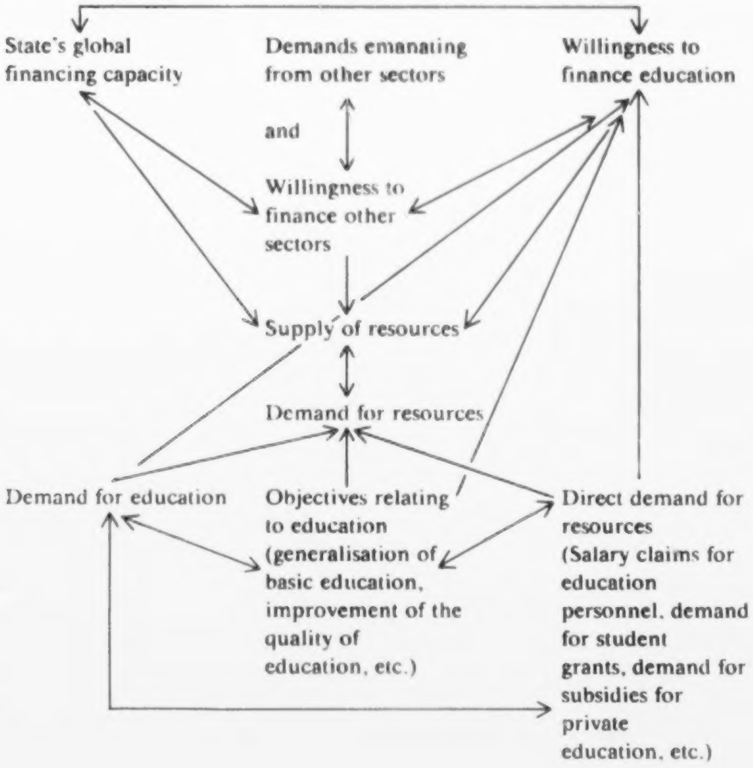
State's global financing capacity
Demands emanating from other sectors
and
Willingness to finance other sectors
Willingness to finance education
Supply of resources
Demand for resources
Demand for education
Objectives relating to education (generalisation of basic education, improvement of the quality of education, etc.)
Direct demand for resources (Salary claims for education personnel, demand for student grants, demand for subsidies for private education, etc.)

Figure 1: The specific process of allocation of public resources to education

The following three factors require particular attention:

1.1.2.1 Evolution of the demand for education

Whilst demand is maintained and even strong in general terms, some trends towards diminution, either relative (reduction in the percentages of children going to school) or absolute (reduction in the numbers at school), are to be seen in both primary and secondary education in various countries in Africa. These trends are recent (they have appeared for the first time in the 1980s) and it is not always easy to distinguish between lowering of demand and limitation or control of supply, but they appear in a sufficient number of countries to seem significant. They are in apparent contradiction with the information provided by private rates of return to education (Psacharopoulos, G., 1985), according to which investment in education remains very profitable at the level of the individual, especially for primary education.

Different factors may explain this contradiction:[2]

- The rates of return which we have available are generally fairly old (the most recent relate back to 1982/1983). The levels of remuneration which they encompass may have declined significantly in the meantime, taking into account the increase in unemployment among those workers least qualified, the decline in real salaries and the development of the informal sector. A fall in demand would then indicate that families have up-to-date information regarding the real state of the labour market.

- The cost of sending all children to school[3] may, in a period of crisis, be beyond the means of the least fortunate families. The profitability of education would be no more than one relevant variable during a period of struggle for survival, which necessarily is translated into a shortening of families' economic horizons, by pruning of those expenses regarded as expendable and by seeking any other form of additional income. It is possible that in some families there will be a tendency to leave at school only those children with the best chances of succeeding, other children being put to productive work.

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[2] Leaving on one side the weaknesses of these rates of return from the point of view of their significance, their method of calculation at the national level (whether the samples are representative in the case of illiterates and those leaving primary school, measurement of the income from their work, opportunity cost) and at the regional level (simple arithmetical average of national rates relating to very different periods).

[3] The expense per child to be borne by families must have increased in various countries with the introduction of monetary payments of different kinds to schools.

The development of non-formal education (Koranic schools in some countries in sub-Saharan Africa, for example) which may happen to coincide with a reduction in demand in public primary education, may indicate from the point of view of parents a reorientation away from the economic objective of education and towards the cultural objective. School education, which had been sought after for its advantages relating to future income, in spite of the values it transmitted, would, at least for some people, lose its legitimacy, once it no longer led directly on to employment.

Whatever may be the causes of this reduction in demand, there could be a great temptation for the public authorities in those countries in difficulties to not try to combat this trend or even to take advantage of it to reduce the allocation of resources to education. It does not seem, however, that that has been happening up to the present time.

1.1.2.2 The quality of education

Quantitative indicators measuring the resources engaged in the learning process suggest a significant worsening of the quality of education resulting from the long-term priority given to quantitative expansion and budgetary cuts imposed by the crisis. It seems that more and more politicians in power are now turning attention to this problem, especially as multilateral organisations, such as the World Bank for example, have reorientated their priorities in this direction in recent years. It is therefore probable that the problem of restoring quality will be receiving increasing attention in the future, in spite of the consequences that can be foreseen for educational expenditures.

1.1.2.3 The evolution of salary claims of education personnel

The reduction of real salaries in the public service and especially among teachers has been very marked (see Appendix II) well before the crisis in African countries and since the crisis in most developing countries. This situation has led to both a hardening of salary demands and a lowering of motivation. Although it is necessary to analyse this phenomenon in greater depth and to disaggregate these conclusions (reactions varying according to different regions and countries), it is probable that salary claims and the lowering of motivation on the part of teachers will in future play a more important role in budgetary negotiations relating to education.

In total, and if one refers to the section "demand for resources" in Figure 1, it is clear that in a period of stagnation or diminution of real resources devoted to education, pressures will become worse and the making of choices will become more and more difficult.

1.1.3 Empirical evidence

In spite of their limitations, they bring out clearly the profound consequences of the crisis for the allocation of resources to education:

- Slowing of the growth and sometimes even decline of the total absolute effort made in favour of education (Eicher, J.C., 1985);
- Reduction, fairly generally, in the relative effort.

1.2 Internal allocation of resources

1.2.1 The allocation process

Whether the process of allocation of resources is discussed by level of education, by type of expenditure, or by territorial unit area, the logic of the concept of irreducible expenditures carries a very important weight in final decisions and even more so in a period of crisis than in normal times. The distribution of the resources which remain available after calculation of irreducible expenditures by level of education and by type of expenditures is subject to strong pressures from different sides but some arguments carry more weight than others in these negotiations (demand for education, salary claims of teachers and the level of unemployed diploma-holders — whether teachers or not see above). If, *in effecting budgetary cuts*, a start is made by reducing capital expenditures followed by non-salary recurrent expenditures before affecting personnel, *in the allocation of available resources*, new recruitment often comes first on account of the pressures which operate in favour of the creation of jobs and on account of preference for quantitative expansion. If we add the fact that directors of institutions do not get the chance to express their preferences (which might be towards an improvement in educational conditions: text books, teaching materials, etc.), this largely explains the final result in the allocation of resources by input.

It is within the scope of such negotiation that may occur a possible redeployment of resources between levels of education, inputs and territorial unit areas. Such *redeployment* may be even more significant since:

- capacity for additional financing will be increased (whilst irreducible expenditures will be limited or the allocation of resources will be favourable), and since

- opposition to the redeployment will be weak.

We should note that the redeployment of resources between levels of education may be effected by the reallocation of financial or real resources (by transferring, for example, personnel or equipment paid from the budget from one level of education to another level).

In various countries, the internal allocation of resources is partly or wholly determined by financial mechanisms which eliminate the resources in question from the process of budgetary negotiation, for example:

In *Brazil*, the education salary (tax of 2.5 per cent on salaries paid out by firms) is earmarked solely for primary education: two-thirds of the sums collected go to the States and one-third to the Union which directly redistributes 25 per cent of same to the municipalities. These resources cannot be used for the payment of salaries of personnel, which must be financed by the States' fiscal receipts. The education salary is thus a mechanism which earmarks sizeable resources to certain expenditures in primary education and which has a redistribution effect as between territorial entities.

In *Colombia*, the financing of public primary education is effected principally through the intermediary of "Situado Fiscal" which stipulates that a predetermined percentage (currently 25 per cent) of ordinary national receipts (current receipts less earmarked receipts) is devoted to it. (See Appendix I). These resources are distributed between national territories and departments in the following manner:

- 30 per cent of the total is divided in equal shares between the territorial units (national territories and departments).

- 70 per cent of the total is allocated in proportion to the population of each unit, in accordance with the results of the 1964 census.

- 74 per cent of the sums thus received are earmarked to primary education and 26 per cent to health.

In parallel, secondary education is financed by the retention, at the national level, of a share of 30 per cent of the proceeds of Value Added Tax which are normally returned to departments (the 30 per cent being distributed between departments according to the same rules as the "Situado Fiscal". The amount of the retention at the national level varies according to the size of municipality).

Lastly, although there are no school fees at the primary education level, in the case of public secondary schools, parents must pay a high percentage (90 per cent on average) of non-salary expenditures through the intermediary of the "Fondo de servicios docentes".

Finally, in all *the countries of Latin America and in some countries in Africa and Asia*, a tax on salaries permits the financing of part of professional and technical training.

We have little information regarding the consequences of these mechanisms for the internal allocation of resources in a period of austerity.

1.2.2 Empirical evidence

Analysis of empirical evidence relating to the *allocation of resources by level* brings out trends which vary by region and by country within each region:

(a) in Africa, primary education's share is tending globally to diminish whereas higher education's share is growing noticeably. There are, however, some countries where primary education's share remains stable or is even increasing (Côte-d'Ivoire, Zambia);

(b) in Latin America, the same global trends may be noted;

(c) in Asia, primary education's share is declining, whilst those of secondary and higher education are increasing noticeably. In Thailand, however, the relative importance of the primary sector is tending to be maintained.

However, these results are not easy to *interpret*:

- It is often very difficult to determine expenditures relating to each level of education on the basis of budgetary documents.

- In a number of countries, changes in classification often take place during the course of the period being studied (for example, inclusion of student grants in administration expenses whereas they were previously included in credits at the corresponding education level).

- In countries where different levels of administration play a part in the financing of education, it is difficult to estimate the division by level of *the whole* of public education expenditures (consolidated accounts).

Table 2: **Public expenditures by student and percentages of children attending school, for principal regions in the world, around 1980**

Region	Public expenditures per student as percentage of GNP per inhabitant			Percentages of children attending school			Number of countries included
	Primary	Secondary	Higher	Primary	Secondary	Higher	
English-speaking Africa	18	50	920	77	17	1,2	16
French-speaking Africa	29	143	804	46	14	2,4	18
South Asia	8	18	119	71	19	4,4	4
East Asia and Pacific	11	20	118	87	43	9,1	6
Latin America	9	26	88	90	44	12,0	19
Middle-East and North Africa	2	28	150	82	36	9,4	11
Developing countries	14	41	370	75	23	6,9	74
Developed countries	22	24	49	100	80	21,0	20

Source : Mingat and Tan, 1985.

- In those countries (which are more and more numerous) where families contribute to the financing of education through school fees or other contributions, the reduction in the percentage of public resources allocated to any one level may correspond to an increase in the charge falling on families.

More refined national analyses are therefore required, which would on the one hand permit the generation of more detailed information and on the other hand explain *ex post facto* the trends thus revealed. Further light may be thrown on this question by comparison of recurrent unitary expenditures by level of education (see *Table 2*). In Africa, where the variations between levels of costs are the most striking, it seems clear that such variations have become much less over time.

Analysis of *the allocation of resources by type of expenditures* shows, in Africa, a reduction in the percentage devoted to non-salary expenditures, at the primary level. At the level of higher education, whereas some countries have recently continued to increase the percentage allocated to student grants (Côte-d'Ivoire, Togo), others such as the Congo have reduced it.

Chapter 2

Utilisation of resources

In a period of budgetary austerity, all expenditure headings of the various ministries are subjected to a critical examination, and educational expenditures are no exception. If it should appear that the resources allocated to education are under-utilised or are not being utilised in an efficient manner, the arguments in favour of a limitation of growth or even a reduction in the credits for education will be reinforced and willingness to grant finance is bound to be affected.

The factors, constraints, forces and mechanisms which contribute to a poor utilisation of resources are numerous and complex; among the most important are:

(a) The mechanisms for financing education (when certain public resources are earmarked for education).

(b) The process of internal allocation of resources (including the distribution of resources between educational institutions and the direct mobilisation of resources by the latter).

(c) The procedures for drawing up the budget and the priorities retained in effecting budgetary cuts; the rules for undertaking expenditure commitments and the control of the utilisation of credits, the regulations concerning the carrying over or the cancellation of credits not taken up.

(d) The mechanisms and criteria for recruitment, allocation and transfer of personnel in educational institutions and in administrative grades.

(e) The level of remuneration of personnel in education.

(f) The procedures regarding supervision of personnel and of institutions.

(g) The procedures for opening and closing schools and classes, etc.

The role of these factors may be illustrated by some examples chosen from among those most significant. Emphasis will be placed on the role of the different mechanisms in the poor utilisation of resources rather than on the specific effects of the crisis in this field.

2.1 Under-utilisation of resources

Numerous problems exist in this area: they arise from political factors, from the quality of the administration and especially from the management of financial and real resources, conditions for recruitment, deployment and remuneration of personnel, etc. In spite of its importance, this question is rarely analysed in a systematic manner.

2.1.1 Utilisation of budgetary credits

Even though we do not have available published quantitative evidence in this regard, direct observation and conversations with education authorities in various countries bring to light the following problems:

- A proportion of the salaries paid by the Ministry of Education goes to persons who no longer work in the administration, who have died or who do not exist. This phenomenon has caused a number of countries to carry out or plan a census of civil servants in post in the sector and, in parallel, to identify and localise all those who are included in the Ministry's payment list.

- The prices paid for contracts for the construction and equiping of educational and administrative buildings, or for the purchase of other goods and services, are sometimes excessively high.

2.1.2 Utilisation of teachers

We may group in four major categories the principal problems in this field:

- Global surplus of teachers in relation to needs.

- Poor distribution of teachers among educational institutions.

- Difficulties in utilisation of teachers in relation to size and location of establishments.

- Weak motivation of teachers.

2.1.2.1 Global surplus

Even if there still exists a deficit of teachers, especially in certain fields, in some countries, there are numerous other countries where the opposite situation prevails. Such excess may take different forms:

(a) High number of teachers allocated to administrative tasks, which are sometimes purely formal, and working in other ministries or even outside the administration (whilst continuing to be paid by the Ministry of Education).

(b) Teachers under-utilised (only carrying out part of their teaching requirement).

(c) Teachers allocated to establishments in name but not carrying out any functions in those establishments.

This situation may arise from a number of causes which tend at times to reinforce each other:

(a) Existence of a high number of trained teachers who are unemployed and pressures applied to the government in the matter of their recruitment.

(b) The question of a political clientele being translated into recruitments in excess of the needs of the public service.

(c) Pressures applied by teachers unions with a view to preventing the dismissal of teachers (in the case of reduction in demand or when a fall in the birth rate brings about a fall in the numbers of children to be taught).

In Brazil, evidence relating to the surplus of teachers has been brought to light by two series of results:

A study carried out by IIEP in 1980 in a sample of establishments at the 1st and 2nd levels, in the States of Bahia and Parana, showed that expenditures on non-teaching personnel amounted to 30 to 40 per cent of total recurrent expenditures, by reason of the presence of various teachers allocated to administrative tasks (C. Tibi, 1987).

A study carried out by the Federal Ministry of Education in 1986 brought to light the size of expenditures relating to the administrative apparatus and their variability between States: whereas in the State of Piaui the administrative cost per pupil is US$23 and represents 70 per cent of the unit functioning cost at the first level, in the State of Sáo Paulo it is only US$15 or 7 per cent of the corresponding cost of functioning

(A.Xavier and A.Marques, 1986). As the authors note, there is one civil servant per 422 pupils in Sáo Paulo, but one only per 136 pupils in Piaui.

In Togo, the excess of teachers at the first, second and third levels results from the fact that recruitment was carried out from 1980/81 to 1983/84 whereas from 1980/81 to 1984/85 the numbers of pupils in school declined significantly (A. Mingat, J.P Larousse, M.T. Rapiau, 1987). *Table 3* illustrates this trend.

A study carried out in a sample of 70 establishments at the 2nd and 3rd levels in Togo in 1986 also shows that the average weekly teaching load per teacher was 14.7 hours in the CEG[4] 13.9 hours in the LEG[5] whereas the prescribed norms are 22 and 18 hours respectively.

Finally, in the Côte-d'Ivoire the surplus of teachers at the primary level is revealed by a comparison between the total number of teachers and the number of those who are actually in post in classrooms, in asministration or as pedagogic counsellors. Rather more than 5 per cent of all teachers cannot be classified into any of these categories.

2.1.2.2 Distribution of teachers.

The number of teachers which establishments have available, in relation to their number of pupils, varies considerably according to regions and type of location (urban, rural). Thus we notice a relative excess of teachers in large towns, in the most favoured regions and the better institutions, whilst there is a relative deficit in rural locations, in remote regions where living conditions are difficult and in less favoured institutions. This situation leads to a poor utilisation of the teaching force as a whole from three points of view:

- Under-utilisation on the time-table of teachers in the excess institutions or over-utilisation in the deficit institutions.
- The taking on, by certain teachers at the secondary level, of subjects which they are not qualified to teach.
- Inefficient utilisation of qualified teachers, who are overly concentrated in a limited number of establishments.

Among the *causes* which explain this state of affairs we may mention:

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[4] CEG = Collège d'enseignement général (lower secondary school).

[5] LEG = Lycée d'enseignement général (upper secondary school).

Table 3: Trends in pupil numbers, 1970-1985 (1st, 2nd and 3rd levels, Togo)

	1970-71	1975-76	1980-81	1981-82	1982-83	1983-84	1984-85
1st level							
Pupils	222 505	362 895	506 788	498 639	492 329	457 376	454 209
Teachers	3 909	6 080	9 201	9 619	10 214	10 145	10 225
Pupil/Teacher ratio	56.9	59.7	55.1	51.8	48.2	45.1	44.4
2nd, 3rd levels							
Pupils	19 746	59 162	125 122	122 925	112 861	95 941	85 745
Teachers	663	1 358	3 166	3 982	4 106	4 200	3 985
Pupil/Teacher ratio	29.8	43.6	39.5	30.9	27.5	22.8	21.5

Source: IIPE (unpublished document, 1986).

- Differences in living conditions according to place to which allocated.

- Differences in working conditions and opportunities for complementary activities according to place to which allocated.

- Relative constraints in allocating and transferring personnel (in a number of countries, it is not possible to transfer a teacher unless he is in agreement with the new posting which is proposed to him; even when it is theoretically possible, the administration does not always have the means to enforce it; female teachers married to civil servants must be given postings in the same towns as their husbands, which sometimes leads to a concentration of female teachers in the capital).

- Poor management of the teaching force.

This problem may be illustrated by the *size of the disparities between establishments* (at the secondary level) in the case of two indicators relating to the utilisation of teachers: the average number of pupils per class and the average weekly teaching hours per teacher in the establishment. Such disparities depend to a certain extent on the effects of size (the values of these two indicators tend to increase with size of establishments) but they also result, and to a large extent, from the process of distribution of teachers to establishments. In *Table 4* will be found the mean value and the coefficient of variation of the two indicators calculated from samples of secondary establishments at the 1st and 2nd cycle level. The coefficient of variation of average weekly teaching hours is very high in some countries, thus indicating significant variations in utilisation between establishments. The diversity of situations as between different countries is very marked, especially in regard to the weekly teaching hours per teacher. Control of the process of deployment of teachers seems to vary greatly between different countries.

2.1.2.3 Difficulties in the utilisation of teachers related to size of location of establishments

Establishments which are small in size do not in general permit a satisfactory utilisation of teachers. It is because of this fact that different formulas for primary education have been proposed in zones with low density of population (classes at various levels, recruitment of pupils every second year, etc.) and for secondary education (teachers trained to teach two subjects, supplementary teaching hours, part-time teachers, etc.)

Table 4: Number of pupils per class and weekly teaching hours per teacher: mean value and coefficient of variation

	First secondary cycle				Second secondary cycle			
	Pupils per class		Hours per teacher		Pupils per class		Hours per teacher	
	Mean	Coefficient of variation	Mean	Coefficient of variation	Mean	Coefficient of variation	Mean	Coefficient of variation
Algeria	-	-	-	-	38.4	0.08	15.8	0.04
Morocco	37.0	0.07	19.2	0.05	36.3	0.12	18.7	0.04
Sudan	52.5	0.15	15.9	0.17	56.0	0.12	15.1	0.20
Colombia	42.1	0.29	19.4	0.14	40.2	0.24	19.8	0.16
Indonesia	46.9	0.37	19.7	0.56	40.0	0.27	17.7	0.69

Source : C. Tibi, 1987.

The data available enable us to draw fairly precise ideas regarding the real utilisation of teachers according to size of establishment in a number of countries (solely for secondary education):

- As a general rule, the number of pupils per class increases significantly with size of establishment.

- The rate of utilisation of teachers is unsatisfactory in small establishments (with less than 400 pupils). Above that size, it tends to stabilise.

On the other hand, it does not seem that establishments of standard size allow a better utilisation of teachers. (C. Tibi, 1987).

2.1.2.4 The motivation of teachers

Most research into the results of schooling throw emphasis on the importance of the motivation of teachers (Fuller, B. 1985). We must, however, point out that teachers' real salaries have tended to decline systematically in the majority of developing countries. This trend started in Africa, immediately after independence, taking account of the high salaries then in force which reflected labour market conditions in France and in the United Kingdom; it only occurred in Latin America and Asia once the effects of the economic crisis started to be felt (see Appendix II). This situation seems to have led a good number of teachers in different countries to seek complementary sources of revenue and to devote less time to their principal activity. Moreover, the absence of supervision and the limited control which directors of institutions often operate over their personnel in less favoured localities and where access is difficult may tend to favour absenteeism on the part of teachers: qualitative information emanating from the responsible authorities in different countries tends to show that this phenomenon is much more widespread than is generally thought. As the effective duration of the school year in number of days is often quite limited, the combined effect of these two phenomena may have serious consequences for the total effective duration of teacher-pupil interaction.

The preceding comments show that the trend in the pupil-teacher ratio which is found in various countries may be due to very diverse causes, and that it would be erroneous to relate this to a systematic effort aimed at improving the quality of education.

2.1.3 Distribution of recurrent non-salary resources

Few studies have been carried out into the allocation of such resources and into the effective use of text-books, teaching materials, etc. Some recent work (C. Tibi, 1987) has revealed the existence of very large disparities in total non-salary expenditures between establishments of the same size and the same kind. These disparities, which are connected with the financing mechanisms (they are more marked in those countries where financing is a mixture of public and private than in those where it is exclusively public) and with the procedures for the distribution of resources to establishments, have as a consequence a global under-utilisation of resources.

2.2 Efficient utilisation of resources

The combination of factors, in the learning process, is far from being efficient, if one refers to studies showing the proportion of recurrent expenditures and the absolute amount devoted to pedagogical materials and in particular to text-books (see *Table 6* below). As this question has been developed in numerous publications (Psacharopoulos, 1987) we shall not cover it again in detail, but it is clear that this is a crucial problem. Where we have available data on the structure of recurrent expenditures in public and private education in the same country, comparison between them shows clearly that the combination of factors is very different as between the two sectors: the proportion of expenditures allocated to teachers is lower in the case of private education whilst the proportion allocated to non-salary expenditures in the same sector is much higher.

2.3 Evolution of unit recurrent costs

The comparison between countries and over time of unit costs expressed in constant dollars gives rise to *serious methodological problems* : between countries, for any one year, differences in unit costs in constant dollars reflect at the same time price differences, which are sometimes very marked (salaries, but also prices of text-books, equipment, etc.) which only correspond to a *very slight* extent to differences in quality and also, to an extent which it is difficult to appreciate, differences in the conditions of school attendance; differences in prices may also vary over time between countries, for example, when purchasing power varies in different ways as between such countries. In any one country, at different times, trends in unit costs in constant dollars reflect, to a large extent, variations in salaries expressed in constant dollars, which itself depends on variations in internal purchasing power and in rates of exchange.

In Africa and in Latin America, unit costs have a general tendency to decline, sometimes quite markedly, and at all levels, whether they are expressed in constant prices or as percentage of GDP per capita. This phenomen results from the combination of three factors:

(a) Diminution of teachers' real salaries, which constitutes by some long way the most important explanatory factor (see above).

(b) Variation in the number of pupils per class, which has tended to increase in some countries and to decrease in others.

(c) Reduction of the real value of unit non-salary expenditures.

Table 5: Annual expenditures devoted to pedagogic material, 1980

	Pedagogic material per pupil		
Region	Amount (dollars)	As percentage of all functioning expenditures	Number of countries included
Sub-Saharan Africa(a)	2.24	3.1	14
East Asia	2.47	1.4	5
South Asia	1.68	8.1	3
Latin America	8.99	3.9	15
Europe, Middle-east and North Africa(b)	3.28	2.0	4
Developing countries	4.80	3.4	41
Developed countries	105.50	3.6	14

Notes: These expenditures relate to sums other than the costs of teachers, in primary schools.

(a) Developing countries south of the Sahara, excluding South Africa.
(b) Excluding Kuwait.

Source: Psacharopoulos, G., 1987.

Conclusion

The complexity and the size of the crisis in the financing of education mean that it is necessary to respond to it by a mix of options which are both appropriate and are conceived as a function of the specific context in eaxh country. Amongst these, improvement of the performance of the public sector must play a significant role, as this contribution has demonstrated.

The efficiency of the management and in particular of the utilisation of resources must be analysed at three complementary levels:

- at the national level,
- at the intermediate administrative level controlling the distribution of resources to institutions;
- at the institutional level.

If the changes to be introduced must be manifest at the level of institutions (greater responsibility of directors of institutions with regard to their management and their results, mobilisation of accrued resources..), these cannot be dissociated from more global measures concerning the mechanisms for financing and control, recruitment, allocation and transfer of personnel, management methods, incentives...

Appendix I

The resource allocation process in Colombia and its consequences for the education sector [6]

Different factors, legal and economic in nature, seriously limit the government's margin for manoeuvre in the allocation of resources and result in the budget, presented to the national Congress for approval, being in equilibrium only formally and not in real terms.

Firstly, there exist various earmarked receipts, amounting to around 36 per cent of recurrent receipts. Under the heading of "Situado Fiscal", for example, 25 per cent of the Nation's ordinary resources are earmarked to primary education and health and transferred to regional education Funds. The proceeds of the 2 per cent tax on firms' salaries is paid to SENA for the financing of professional and technical training, etc.

The considerable increase in the public debt means that its servicing cost represents an ever-growing proportion of the Nation's total expenditures (rising from 13 per cent in 1985 to 27 per cent in 1987).

As there cannot be any expenditures (included in the budget) without legal authority, increases in salaries for civil servants linked to inflation can not appear in the budget; salary expenditures for the forthcoming year are therefore estimated on the basis of the salary scales for the current year. The same situation applies to non-salary expenditures which can not be revalued on account of inflation. Expenditures incurred for the servicing of the debt, however, must be included in the budget for the following year, in such a way as to take account of the devaluation of the national currency.

Investment expenditures, whether they are financed by earmarked resources or by external credits, are estimated at following year prices.

The budgetary deficit of the previous year (fiscal deficit) must also be included in expenditures, but at the prices of the corresponding year. As budgetary receipts are evaluated taking into account inflation, that is to say at the prices of the following year and since credit resources can only be included once they have been authorised and guaranteed, mathematical equilibrium between receipts and expenditures means that the budget is financially in disequilibrium. It will be necessary to find new resources (essentially through the intermediary of internal and external loans) in order to finance the increase in recurrent and capital expenditures which, although envisaged, have not been included in the budget. There are also some sectors the recurrent expenditures of which, although included in the budget, have not been financed. Additional budgets will therefore have to be prepared during the course of the year in order to cover this deficit.

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[6] According to "El proceso de asignacion de recursos a traves del presupuesto nacional de Colombia y sus efectos en el sector educativo", Hector Cadena, 1987.

The determination of the resources which may effectively be allocated within the scope of the budgetary process takes place in the following manner:

(a) As the payments on current account of the preceding years are generally less than current receipts, the first step is to evaluate the current deficit to be taken into account.

(b) Then it is necessary to estimate the *resources fully available* as the difference between recurrent receipts on the one hand and the proceeds of earmarked taxes, debt servicing cost and the deficit of the preceding fiscal year on the other.

(c) *The resources fully allocatable* are obtained by deducting the budget of the national Congress (which must first be passed, according to the law) from the resources fully available.

(d) Finally, the *budgetary programme deficit* corresponds to the difference between the administration expenses and the fully allocatable resources.

This deficit will be found under the headings of the administrative expenditures of the various ministries, as follows:

- Transfers of regional funds for education and universities (Ministry of Education).
- Personnel costs of the Ministries of Defence and of Justice.
- The payment of pensions (Ministry of Work).
- Transport subsidies (Ministry of Economic Development).

The total amount to be financed by additional budgets is equal to the initial deficit together with essentially the increase in salaries and non-salary expenditures linked to inflation. The financing of these additional budgets is effected through the intermediary of internal credit, calls on the central bank and external credit (which can finance solely investments).

Public investment in Colombia is not financed by resources fully available but by earmarked receipts and external credits, which are already earmarked by sector and necessitate local resources to be raised as off-set. If there are not sufficient national resources for expenditures of current administration, there will still be less for investment.

(a) The preparation of additional budgets concerns mainly those sectors which have a significant deficit in the budgetary programme (Ministries of Education, of Defence, of Justice, and of Work). The State has to decide to what extent the expenditures of these Ministries can be covered by the fully allocatable resources in order to determine when the additional budgets will need to be prepared.

(b) This work cannot be commenced before the month of August, because it is only from that month that the State has authorisation to mobilise resources for internal credit; it must also take into account the procedures to be carried out by the Office of the Controller General of the Republic. The issue of Treasury Bills and calls on the central bank take place in the short term, as a function of the State's liquidity needs and the market situation and in such a way as to keep inflationary pressures under control to the greatest extent possible.

(c) The sum of all these factors means that it is extremely difficult to programme and manage the budget. It is practically impossible to plan ahead, save only in the very short term.

Appendix II

Evolution of real salaries of teachers

On account of their importance in educational expenditures, teachers' salaries call for more detailed examination. A number of questions may be studied:

(a) The level of salaries

What have been the trends in teachers' salaries over time? How do they relate to the market situation?

(b) Policy with regard to salaries

What options are open to the education authorities in order to achieve a better utilisation of teachers?

(c) Combination of factors of production

How to achieve a more efficient combination of factors?

We shall only develop here the first of these points, the others being discussed later. Analysis of the trends over time in teachers' salaries may be carried out from two complementary points of view:

(a) In terms of purchasing power, by comparison with the trend in the retail price index. Two choices are possible:

- To study variation in purchasing power for predetermined level of qualification and length of service (by taking a specific point on the salary scale),

- to study variation in purchasing power of one individual (taking into account change in his or her length of service and where applicable in his or her level of qualification)

(b) In terms of GDP/capita in order to study the trend in the relative remuneration of teachers.

Very little work has been carried out in this field in developing countries and it is difficult to have access to historical series which are of sufficiently long duration to enable one to study long-term salary trends. The data collected by the Institute in various countries since the beginning of the 1970s does, however, enable us to draw the following conclusions (cf. C. Tibi, 1987)

- In all the countries studied, purchasing power for predetermined level of qualification and length of service has declined spectacularly; the reduction in real salary level varies, according to country, from 40 to more than 70 per cent (with the exception of Colombia).

- In some countries, the reduction applies to salary at end-of- career to a much greater extent than to that at the beginning.

- The diminution in salaries expressed in terms of GDP/capita is also very marked. It is more or less as pronounced as the reduction in purchasing power, depending on whether GDP/capita increased or decreased in real terms since 1970.

- We find a very great variability in salaries expressed in terms of GDP per capita for different countries in Africa.

Analysis in the trend of purchasing power of individuals is rarely carried out, in so far as it depends on hypotheses regarding salary scale changes. In various countries, the differences between salaries at beginning and at end of career, at constant level of qualification, and between salary scales, vary considerably. In the case of Togo, for example (see *Table 5* below), we notice the importance of the salary variations between different categories of primary teachers. If we know that a considerable proportion of teachers recruited as monitors have been, after re-training courses, promoted to asssistant teachers, and then in certain cases, to teachers, we find that their purchasing power rose considerably in spite of the general reduction in real salaries. This is only a question of one particular case, but it shows the need for caution in analysing the possible consequences of reduction in purchasing power.

Table 6: Salary scales of primary school teachers, Togo (expressed as index)

	Monitors	Assistant-Teachers	Teachers
Beginning			
Beginning of career	100	204	278
Mid-scale	174	296	463
Career end	233	370	611

Evaluation of teachers salaries in relation to the situation in the labour market can only be carried out in a national context (comparison with salaries of other personnel at the same level of qualification in the public sector and the private sector; possible existence of unfilled posts, unemployed teachers, etc.). International comparisons (A. Cox Edwards, 1987) show that the ratio:

$$\frac{\text{teacher's salary}}{\text{GNP/capita}}$$

decreases when GNP/capita increases, the differences in relative salaries between countries being related to differences in relative productivity. With growth, the supply of teachers would tend to increase in relation to the supply of work in respect of other less-qualified forms of employment, which would bring about the reduction in their relative salaries. This result contradicts the hypothesis that teachers' salaries should, in the long-term, increase in line with GNP per capita, thus following the general increase in productivity.

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Teaching and learning conditions in developing countries

Françoise Caillods and T. Neville Postlethwaite[1]

In most developing countries enrolment expansion took place at a very rapid pace in the last decades. Enrolment at first level increased at an annual rate of 4.2 per cent between 1965 and 1970, and 3.6 per cent between 1970 and 1980. As more and more countries came near to achieving universal primary education, enrolment expansion slowed down at primary level but continued at secondary and tertiary level. Second level enrolment in developing countries increased at an average annual rate of 7.0 per cent between 1970 and 1980 and 3.11 per cent from 1980 to 1985. Enrolment at tertiary level increased at an annual rate of 9.4 per cent until 1980 and has continued at an average of 6.3 per cent since then. There has always been a general concern that this quantitative expansion could work to the detriment of the quality of learning. Educational research has shown, for example, that average scores of pupils at the end of primary schools are much lower in many, but not all, developing countries than in industrialized countries. It has shown also, that the influence of the quality of the educational provision on pupils' achievement in developing countries is important. In developed countries on the other hand educational provision tends to be good; lack of provision does not exist and hence does not influence achievement. Also, whereas home backgrounds tend to have a strong influence on school achievement in many, but not all, subject areas in developed countries, this is not the case in most developing countries (Heyneman and Loxley 1985). In fact disparities in the quality of school inputs can be very large in the latter countries and hence, are more important in their influence on achievement than are differences in home backgrounds.

This concern for the deteriorating quality of education has increased recently as the severe economic crisis, with which developing countries have had to cope in the last ten to fifteen years, has led to serious financial constraints and budgetary cuts affecting even further the quality of the educational service. Part I of this chapter will examine briefly the situation regarding teaching/learning conditions in developing countries. Part II will then present some research results assessing the outcomes of the educational process (pupils' achievement and retention ratios). Finally, after assessing which inputs appear to have most impact on pupils' achievement, it will make recommendations for future policies and action.

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Part I

Teaching/learning conditions

Many factors operate to produce pupil learning and achievement. The child's home background, the curriculum, the materials, the language used, the time devoted to instruction and homework, the work ethos of the school, the pupils' motivations, the teachers' perceptions of the ability of the class, their education and status, their behaviour and teaching practices all intervene in this network of influences.

Since teachers are a key element in the teaching/learning process and since they constitute in most developing countries the main, if not the only, agent of transmission of knowledge in schools, we shall start with some comments on teachers' level of qualifications, training, working conditions and teaching environment.

1.1 Teachers' level of qualification

No recent international statistics exist on teachers' level of qualification. It seems, however, that the number of years of education required from primary school teachers varies a great deal from country to country and from continent to continent. In Latin America, most countries recruit their primary school teachers after some years of teacher training at a level equivalent to the end of secondary schools. The tendency is increasingly to recruit teachers with some training after secondary education. In Africa and Asia, the situation is more variable, but primary school teachers have often received some years of training after primary education only, or have a lower secondary education qualification with or without teacher training.

The proportion of teachers having received some training has increased but the situation remains bad in rural areas, where it is difficult to send qualified teachers (Unesco 1986a). An extreme example of this phenomenon can be seen in Brazil. While unqualified teachers represented 25 per cent of the whole teaching force in first level schools at the national level in 1982, they constituted 73 per cent of rural teachers. In municipal schools (basically rural) of north and north-east Brazil, nearly half of the teachers had not even completed first level education (Brazil, Ministry of Education and Culture, 1985).

In certain countries the situation has deteriorated at secondary education level where crash programmes of expansion have led Ministries to recruit many untrained and insufficiently educated teachers.

There is, of course, debate on the extent to which teachers need to possess a lot of knowledge. Some argue that, provided the teacher has certain teaching skills, it is sufficient for him to know only marginally more than the pupils need to learn. Others maintain that all teachers should have a high level of general education and that secondary school teachers should have a very good knowledge of the subject they are teaching. This is not always the case, however, and the level of knowledge of teachers in developing countries can sometimes be fairly low. Shukla (1974) tested teachers teaching science to 14-year olds in India and found that their average achievement in science was lower than that of 14-year old students in some European countries. In a number of countries, primarily in Africa, the problem is further complicated by the fact that teaching at primary and/or secondary level takes place in a language which is neither the teachers' nor the pupils' mother tongue. In Tanzania for example, English is introduced as a major subject in primary education and it becomes the medium of instruction at secondary level. Criper and Dodd noted in their study of the teaching and learning of English throughout the Tanzanian education system that "most primary teachers do not approach the level of fluency and accuracy needed to teach even primary children". (Criper and Dodd 1985, p. 14).

Tanzania is not the only country in that situation and similar comments can be heard in neighbouring countries and in French speaking African countries. Generally speaking, IEA has pointed out that, within countries, students having teachers with more years of post-secondary education perform better than those students having teachers with fewer years of post-secondary education. Thus in spite of some improvement in the educational level of teachers, much remains to be done to improve their level of general knowledge and to upgrade their qualifications both in primary and secondary education.

1.2 Teachers' working conditions

Where the situation has improved most is in the area of pupil/teacher ratios. These ratios have decreased in developed and in developing countries and in primary and in secondary education. Pupil/teacher ratios in first level schools decreased from an average of 45 in 1970 to 42 in 1984 in Africa, from 33 to 29 in Asia during the same period and 35 to 28 in Latin America. Such average figures hide vast disparities between countries, between rural and urban areas and between schools. Eleven countries of Africa still had an average pupil/teacher ratio above 50 and six countries had an average ratio above 60 in 1985 (Unesco, 1987). In some urban areas the number of pupils per class is way above 70 or 80 while it is much lower in rural areas. In Benin, for example, the average pupil/teacher ratio decreased at national level from 43 on average in 1981 to 33 in 1985. The averages per district, however, vary from 18 in some rural district to 64 in the capital city (Benin, 1985). In Ouagadougou (Burkina Faso), the number of pupils per class in certain schools is higher than 120 pupils, while the national average is 62. This variation, which is not specific to Benin nor Burkina Faso reflects, to a great extent, the diversity in population density. It reflects as well, on one hand, a certain under-utilization of teachers in rural areas and thus a need for redeployment and, on the other hand, the lack of physical facilities in cities. Class sizes tend to be higher than pupil/teacher ratios. The effect of class size will be returned to later in this paper.

If teacher training and pupil/teacher ratios have improved, other negative factors have affected the teaching profession.

First of all, in many countries, and particularly in developing countries, teacher salaries have declined in real terms. This phenomenon is not a recent one but it has accelerated in recent years due to the economic crisis and the consecutive budgetary cuts. Mexican teachers lost about 40 per cent of their purchasing power from 1979 to 1984, Peruvian teachers lost 35 per cent of theirs between 1974 and 1980 and Bolivian teachers 65 per cent of theirs between 1980 and 1985.[2] In the Philippines, the Government has recently doubled teachers' salaries; nonetheless they remain below the official poverty line.

In Africa, Zaire, Sudan, Ghana and Tanzania are also cases in point. The salaries of teachers, like those of other Government employees, have not been adjusted for inflation and have decreased substantially in real terms over the last 5 to 15 years. In Tanzania, for example, salaries fixed in 1974 for teachers were not revised until 1981. In spite of promotions and increments, the vast majority of teachers in 1987 had a purchasing power of about 40 to 75 per cent of that of the lowest paid teacher in 1977 (Anderson and Rosengart, 1987). In Ghana, the purchasing power of the lower level public service pay scale was, in 1984, only one fifth of its value in 1977. In higher grades it was just 6 per cent. Even if such losses were mitigated by promotions, increments or other payments-in-kind, the effect on motivation has been very negative. In Zaire, real salaries in the civil service have lost 85 per cent of their purchasing power between 1975 and 1984. The ILO, in a 1987 report, notes "In some cases in Africa where real pay has fallen 50 per cent or more, the effects on standards of public administration have been devastating"; "Many observers have associated the large absolute and relative decline in public sector pay with the departure of the most productive employees, increased absenteeism, illicit practices, moonlighting both during and after regular working hours or simply low work effort" (ILO 1987, p. 101).

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[2] They have been increased since but salaries still remain very low.

Teachers are not different from other civil servants and observers of the Latin American and African scene are well aware that teachers at all levels – primary, secondary and higher education – are becoming more concerned in some countries, probably rightly so, with making a living than with teaching.[3] Whenever possible, teachers take up a second job or a third job. In some countries where the shift system operates it is quite common for teachers to teach one shift at one school and a second shift at another school. In urban areas, teachers open small business (e.g. taxis). In rural areas, they spend more time on their farming plots. Given their long working days they prepare their classes less and less, do not correct homework or are simply absent. Quality definitely suffers. In the University, professors and lecturers take up consultancy work with private companies, and spend less time with their students and even less in research.

The situation is fortunately not as bad as this everywhere. But salaries have rarely kept up with inflation (even when they have been increased) and in more and more countries they are paid late. The effect on teachers' level of motivation is similarly negative.

Connected with the relative decrease in salaries (but the decrease in salaries is not the only reason) is the decline of the status of the teaching profession. The primary school teacher no longer has the authority and prestige he/she had in the past. An indication of this lack of status is the fact that fewer and fewer graduates, particularly male graduates, want to enter the teaching profession at least at primary level. Teaching is more and more considered as a women's profession and the income received is considered as only a supplementary increase for the household. This decline in the status of the teaching profession affects both developed and developing countries and has become a matter of concern to education authorities in some industrialized countries such as France.

1.3 Teachers' environment

To make matters even worse teachers often work in an unfavourable environment.

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[3] In the Indian sub continent (Bangladesh, Nepal, India) the absenteeism of teachers and the existence of ghost teachers have been known for years, but it has never been possible to measure the extent of the problem.

1.3.1 Teachers' guidance and supervision

Many untrained teachers have been recruited; many new graduates have been sent to rural areas assuming that they would receive attention, guidance, and supervision from qualified headmasters and supervisors. No recent study exists at the international level either about the level of qualification of headmasters or about the frequency of supervision. Few countries, however, organize training programmes for school principals. In some cases, particularly in rural areas, their educational level is hardly higher than that of their teaching staff. The consequences can be serious not only for the orientation of young teachers but also for the running of the schools and the management of their budgets. A survey on a probability sample of Indian schools shows, for example, that heads of schools do not spend much time on supervision and guidance to teachers (Singhal, 1988).

As for supervision, it is a well known fact that many supervisors rarely visit schools in the remote rural areas and the situation has become much worse, with the onset of the economic crisis resulting in African countries and some Latin American countries in a total lack of transport at their disposal. When supervisors do visit schools, they often limit their activities to routine, administrative matters such as checking the collection of data, attendance sheets ... and very rarely do they carry out their function of helping or encouraging teachers in their teaching duties.

This lack of guidance and supervision can become a real problem in countries which have a high proportion of one-teacher schools, as for example Guatemala (54 per cent), Ecuador (85 per cent of rural schools) or Colombia. These teachers often have not received a special training for this sort of teaching, and do not have enough teaching aids; they are therefore very isolated.

1.3.2 Teaching aids

Teachers increasingly do not have the necessary teaching aids at their disposal (blackboard, textbooks, "library" i.e. stock of books available, science kits in secondary education, etc.). Schools and classrooms are not always adequate in terms of light, ventilation, furniture, sanitary facilities, drinking water available, and the like. Information is not systematically collected on these points at the national level. Hence, no comprehensive national or international statistics are available. Sparse evidence from surveys conducted in different countries shows nonetheless that:

- Teachers do not have handbooks in sufficient quantity for their own use. In the Kirundo district of Burundi for example, only 30 per cent of the teachers had all the books they needed for their teaching (IIEP, 1982). There are not enough recent surveys to show the extent of the problem elsewhere but more and more reports on African countries as well as on some Asian and Latin American countries draw attention to the critical situation in this respect.

- Schools are sometimes in very bad condition and/or do not have the minimum sanitary facilities. 42 per cent of the schools in the Kilosa district in Tanzania had no water available and 10 per cent had no latrines (IIEP, 1982). 20 per cent of the schools in the Ed Dueim district in Sudan had no water and 57 per cent had no latrines (IIEP, 1983). 80 per cent of schools in the Seti region of Nepal had leaking roofs, only 28 per cent had toilets and 20 per cent were in a state of collapse.

- Blackboards are not available in every classroom. A probability sample of Indian schools shows that 40 to 44 per cent of primary schools do not have enough furniture for teachers, 61 per cent do not have enough blackboards (i.e. it being desirable to have one per classroom), 49 per cent do not have enough maps and charts and 49 per cent do not have any desks and chairs for students (Singhal, 1988).

- Teacher housing in rural areas is either not available or, when it is, in very insufficient quantity. The difficulty of finding housing contributes to the reluctance of qualified teachers to go to rural areas.

- Many primary school pupils have to sit on the floor. That is the case of 80 per cent of pupils in the district of Dhamar in Yemen (IIEP, 1979), 98 per cent of pupils in the Bilene district in Mozambique (IIEP, 1987), 56 per cent in Nyong and Mfoumou department in the Cameroon, and 65 per cent in Lesotho's church primary schools.

Many other examples from African and Asian countries could be given. Though not all of these factors may have a direct influence on the quality of the teaching process, they do influence the degree of commitment and motivation of teachers and, therefore, have some bearing on the quality of education. The list of reforms which failed because the teachers did not support them or because they had not received the proper information (including textbooks and materials) is endless.

1.4 Students' textbooks and materials

Textbooks, exercise books, pupils' slates and chalk and pencils are in short supply in many countries. Some regional studies have outlined how critical the situation can be in certain countries.

In the Parish of St Thomas, Jamaica, 13 per cent of the pupils had neither pens nor pencils at the time of the survey in 1983; 42 per cent of primary school pupils and 49 per cent of middle school students had no textbooks (IIEP, 1984). In the Kilosa district of Tanzania, pupils had no textbooks at all in 52 per cent of the schools and there was an insufficiency in 79 per cent of them (IIEP, 1982). Seventy per cent of the pupils in Kirundo, Burundi, did not have the required books either in French or in Kirundi (IIEP, 1982). In Bilene, Mozambique, textbooks were available for less than 10 per cent of grade 1 pupils and less than 50 per cent of grade 3 pupils (IIEP, 1987). The situation tends to be slightly better in Latin America, with the exception of rural areas and shanty towns. Five per cent of the primary school pupils in Ibarra county, Ecuador, had no textbooks at all and 77 per cent of them only had all the books required (IIEP mimeo, 1981). In three states of North-East Brazil, 29 to 54 per cent of schools did not receive primers for all students in 1983 and 50 to 58 per cent of pupils did not use textbooks (Armitage, 1986).

Such equipment and materials is normally subsumed under the proportion of recurrent expenditure devoted to non-salary expenditure. This proportion has always been very low, particularly at primary education level but it can also be relatively low at the secondary education level. The expenditure on instructional materials per pupil in 1980 had been estimated at US$1.68 in South-Asia, US$2.24 in Sub-Saharan Africa, US$2.47 in East Asia and US$8.99 in Latin America (World Bank, 1986a). On average, developing countries spent US$4.80 on instructional material per pupil annually, 22 times less than developed countries. The per pupil non-salary recurrent expenditures have an extremely large range over countries, from 11 US cents in the Philippines to over 250 US dollars in Canada. Many developing countries spend under 4 US dollars per child on these items. Budgetary restrictions are resulting in a decrease in the state per pupil expenditure in non-salary items. Increasingly the responsibility for buying books and stationery is transferred to families. As the purchase of a small item of equipment can represent a significant investment for some families in rural areas and shanty towns, it is not surprising that the situation mentioned above should prevail.

The fact that pupils have rarely any opportunity to read or study from printed material has probably serious consequences for the development of literacy skills. What can pupils learn, seldom reading, listening to a teacher who is not necessarily well trained or motivated, and not always able to exercise or transcribe what they have heard because of lack of exercise books or slates?

Part II

Pupil retention and achievement

In this section of the paper, an overview will be presented of some outcomes of the teaching/learning process at the level of the school. Two types of indicators are commonly available, namely indicators of internal efficiency: repetition rates and retention ratios and levels of achievement.

2.1 Repetition (Grade repeating)

The level of repetition is not a clear indication of pupils' learning achievement : certain countries, including French-speaking countries, traditionally have high level of repetition while others encourage low repetition or automatic promotion. This reflects a divergence in the pedagogical philosophy more than a difference in pupils' cognitive achievements. Repetition ratios can also change fairly quickly when ministries of education issue instructions in this respect. It is therefore not possible to compare ratios between countries and one has to be careful when making comparisons over time. It is nonetheless worrying to note the high percentages of repeaters in certain countries. 23 countries in Africa, 6 in Latin America and 3 Asian or Arab states had percentage of repeaters in primary education above 20 per cent in 1982-83. 13 countries in Africa had above 25 per cent. One out of every 4 pupils in these countries was considered as not having assimilated the programme in his/her grade sufficiently to be promoted to the next grade (Unesco, 1984). Even more preoccupying is the fact that this percentage shows no sign of declining. It has remained stable on average in Asia and Latin America[4] and seems to have increased in quite a large number of African countries (see *Appendix I*). One has to be careful when drawing conclusions but the figures in *Appendix I* seem to indicate a certain deterioration in the level of outcome of pupils in African countries.

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[4] In Latin America the percentage of repeaters had in fact declined between 1970 and 1975 but it rose again in 1980 and 1983 (Unesco, 1986).

2.2 Retention ratios

How many children progress through the various grade levels in school is a function of many variables. Among these are: the proximity of schools and the availability of places within schools; the degree of motivation of parents to send their children to school; their ability to pay for schooling where payment is required and to forego the work or the income that children could have produced while staying at home; the aspirations of pupils themselves; their employment prospects and their level of achievement. High wastage rates cannot be blamed only on the school, far from it, but it has been shown several times that low pupil achievement, irrelevant curriculum, and the negative attitudes of teachers, tend to discourage parents from sending their children to school. Thus, low retention rates and high drop out can be taken as an indication of the inefficiency of the school system.

Weighted averages of survival rates by region computed by Unesco show that the proportion of children in primary education around 1982/83 who reach grade 4, is low: 64 per cent in Latin America, 71 per cent in Africa (23 per cent in Portuguese speaking countries), 85 per cent in Asia and Oceania as compared with 92 per cent in Europe (Unesco, 1986b). Retention rates had on average increased in all regions between 1970 and 1980 which is encouraging. Individual country data however remains worrying. Retention ratios have declined in twelve African and Arab countries, sometimes very sharply between 1980 and 1983 (Togo, Benin).[5] In Nepal, Bhutan and Bangladesh, about half of the pupils drop out at the end of the first grade and only 35 per cent of entrants complete a three-year cycle (Unesco, 1984). In Latin America the difference between urban and rural areas is large. In Colombia only 18 per cent of pupils in rural areas reach grade 5 compared with 62 per cent in urban areas (Colombia, 1985). In Guatemala 10.4 per cent of new intakes in rural areas reach grade 6 compared with 42.5 per cent in urban areas. Various studies have shown that those who drop out of school early have a good chance of relapsing into illiteracy, mainly because they had never attained a functional level of literacy while in school in the first place (Hartley and Swanson, 1986).

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[5] Further studies are required to determine to what extent this decline is linked to the erosion in the quality of schooling or to other factors (cost of schooling, low employment prospect).

2.3 Achievement

It is one thing to enrol and keep children in school; what they learn is another matter. All school systems have the aim of ensuring that the children enrolled acquire at least basic literacy and numeracy. Those who proceed to secondary school are expected to acquire higher levels of knowledge in mathematics and science, in foreign languages, literature and the social studies (history, geography, etc.). It is important to be able to measure how much they learn and how their levels of achievement compare from country to country.

One difficulty of commenting on achievement outcomes is that there is a paucity of hard evidence. It is difficult enough to find data on achievement of pupils in developing countries for one year. It is quite impossible to find time series data which would provide evidence on whether standards have really fallen, been maintained or improved. Examination results are hard to use because rarely do they produce evidence on what children can or cannot do. Examinations tend to be norm referenced and the norms change from year to year, in some cases according to the number of places available in the following level. The cut-off points for the allocation of those passing and failing, or those receiving an A, B, C or D mark, depends on the distribution of scores so that a certain percentage, say, 60 per cent will pass the examination this year. In such cases, no comparisons over time are possible. Criterion referenced measurement on the other hand (showing which objectives have been attained and which have not been attained) is rare in developing countries and when it exists it is usually available for one specific year only.

There is, however, some evidence that cognitive achievements in many, but not all, developing countries are low and, in general, the achievement is lower than that observed in developed countries.

Recently, the Planning Institute of Jamaica (1987) showed that in primary schools in Jamaica 35 per cent of pupils were reading at below grade level. Of these 35 per cent nearly two thirds were non readers (i.e. not able to read). In a sub-study of these data in some schools it was shown that 25 per cent read haltingly and 14 per cent were unable to read. In Tanzania Criper and Dodd found that two thirds of pupils in the last grade of primary education were unable to read and understand any text in English. In spite of five years of learning English in school, 95 per cent of primary school children had not started to master this language. By the second term of Form I secondary, where pupils are supposed to be taught in English, 60 per cent of pupils were still at the level where they could only read 500 word picture books; "there is no way that such pupils could follow instruction in other subjects through English" (Criper and Dodd, 1984, p.14).

The International Association for the Evaluation of Educational Achievement is beginning a study of reading literacy at the end of 1988.

Some 46 countries will participate and more than half of them are developing countries. One of the aspects of reading to be examined will be basic literacy skills (sometimes called literacy survival skills) and these will include criterion as well as norm-referenced measures. The study will concentrate on 9-year olds and 14-year olds, but countries will be able to assess other age groups should they wish to do so. The IEA will also undertake analyses to identify those factors "causing" differences between countries' levels of achievement as well as between schools and pupils within countries. The search, in particular, will be for "alterable variables" i.e. those variables which can be changed by Ministries of Education. The insufficient level in reading and writing is becoming a matter of serious concern for governments, parents, educators and employers in all countries. Hence, the attempt to discover how it can be improved.

Obviously, one should always be careful when comparing achievements between countries. First, curricula might differ. Second, the socio-economic environment and the cultural context of the pupils are generally different and third, the set of values, attitudes and commitments that the society and schools may want to encourage can also be different. School systems are nonetheless assigned increasingly similar objectives vis-à-vis such basic skill subjects as science, mathematics and reading comprehension. Thus, without emphasizing the notion of an international educational standard it is useful for countries to know how much their pupils achieve and how these achievements compare with other countries, developed or developing.

In 1970, The International Association for the Evaluation of Educational Achievement (IEA) conducted studies in various subject areas, among which science and reading comprehension. *Figure 1* presents data from the 1970 science study and *Figure 2* the data for reading comprehension.

In the three developing countries (India, Iran and Thailand) some 15 to 20 per cent of 10-year old children were unable to read three simple sentences and reply correctly to a simple question about them. When compared with OECD countries at the 10-year old level, India's performance was 50 per cent lower than that of OECD countries and Iran was 75 per cent lower. By the 14-year old level this gap had grown to a 6 to 1 difference and by the last grade of secondary school it had grown to a 10 to 1 difference (Thorndike, 1973).

Using the data from IEA and other surveys in 25 countries, Heyneman and Loxley (1983) concluded "that school children in low and middle income countries have learned less science after the same, or approximately the same, length of time in school as wealthy countries. In the United States the average mean is 32.8, in Japan 40.9 ... However in India it is 20.6, in Colombia 24.0 and in Thailand 28.2" (p. 1173).

In an IEA mathematics study in 1981, 13-year olds in the OECD countries scored an average of 52.9 per cent (i.e. 52.9 per cent of the

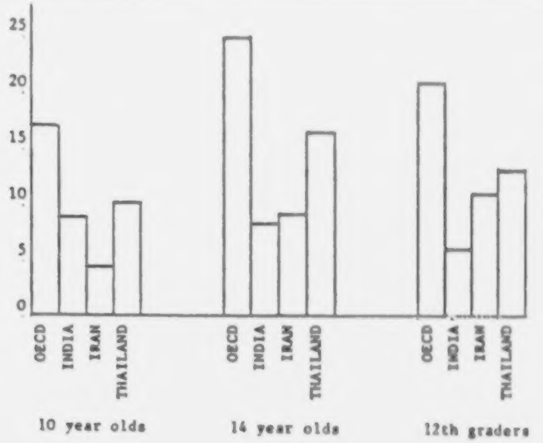

Figure 1: Science achievement at three levels of education (1970)

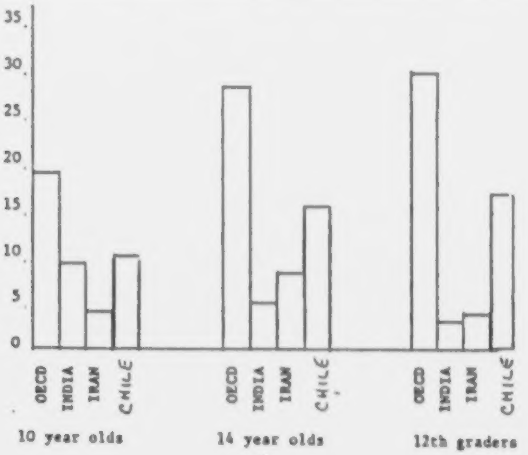

Figure 2: Reading comprehension at three levels of education (1970)

items were correct) and the same age group in Nigeria and Swaziland scored an average of 34.5 per cent. The overall standard deviation was 11.2. It looks as though there is a gap in the mathematics achievement of 13-year olds of some three to four years between OECD countries and the two African countries (Robitaille and Garden, in press).

A similar study on science achievement was undertaken in the period 1984 to 1986 in which five developing countries participated together with developed ones (*Figure 3*).

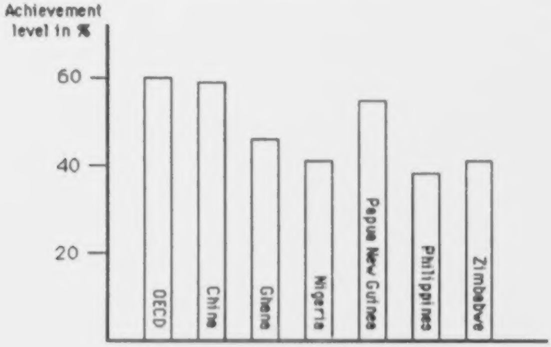

Figure 3: Science Achievement (14/15 years old) 1984-1986

The 14-year olds in the OECD countries scored 60 per cent on a 30-item test, while Ghana, Nigeria, Zimbabwe and the Philippines scored 46, 41, 41 and 38 per cent respectively. On the other hand, China (grade 9) and Papua New Guinea (grade 10) scored 59 and 55 per cent respectively. (The Chinese sample did not include all of China but only the 3 large provinces around Beijing). When performance was measured on lower mental processes versus higher mental processes (in the Bloom taxonomic sense)[6] then, in general, the developing countries had lower scores on the higher

[6] Lower mental processes refer to the recognition or recall of factual information or simple calculations i.e. requiring only limited mental effort. Higher mental processes refer to the understanding of principles, the application of principles and factual knowledge to the solving of a new problem, analysis, synthesis and evaluation.

mental processes than on the lower. Developed countries tended to have about the same levels of performance on both. It should be stressed that the intended curricula in science (i.e. what the pupils were meant to learn) were very similar in all the countries covered (IEA, 1988). In fact, all countries underlined that the test was fair for their pupils and that comparison with other countries' achievement was legitimate.

It will be noted that the achievement differences in science are less than in reading and mathematics. Thus, in order to measure the achievement of a school system, it would be desirable to test in various subject areas at the same time and to plot the profiles of achievement of all countries and subject matters in a common scale. To describe the achievement in one subject matter only can be misleading since it could occur that a country which has high performance in one subject area may have low performance in another.

When evaluating the quality of the teaching/learning process it is not sufficient to limit oneself to the end-product of a system. One has to take into account its capacity to impart knowledge to all students who enter or should enter the system, as in theory, it is easier to attain high levels of achievement when only a highly selected group enter, say, secondary education. Thus, before leaving the sparse information on achievement two further concepts are introduced: the concept of 'achievement yield' and the concept of 'equality of educational opportunity'.

2.4 'Achievement yield'

Consider *Figure 4* below. Four yield curves are presented: for Japan, the Philippines, Thailand and the USA. The test is an internationally constructed science test said to be equally fair to each of the countries. It has 30 items shown on the horizontal axis. On the vertical axis appears the proportion of the pupil enrolment and of the age group who get one, two, and up to thirty items right.

Some systems have 100 per cent, or nearly 100 per cent of an age group in school (Japan and the USA). For the Philippines and Thailand a distinction is made between those in school (all those in school counted as 100 per cent) and the proportion of the age group actually enrolled (in the case of the Philippines 60 per cent and in the case of Thailand 32 per cent). The area under the curve represents the percentage getting one item right, the percentage getting two items right, etc. (an inverted cumulative frequency distribution). If all pupils answered all items correctly the whole rectangle would be filled. The proportion under the curve (how many achieve how much) can be calculated as a percentage of the total. This is reported in the rectangle as the efficiency index of the school system, on the assumption that an efficient system where every pupil correctly answers

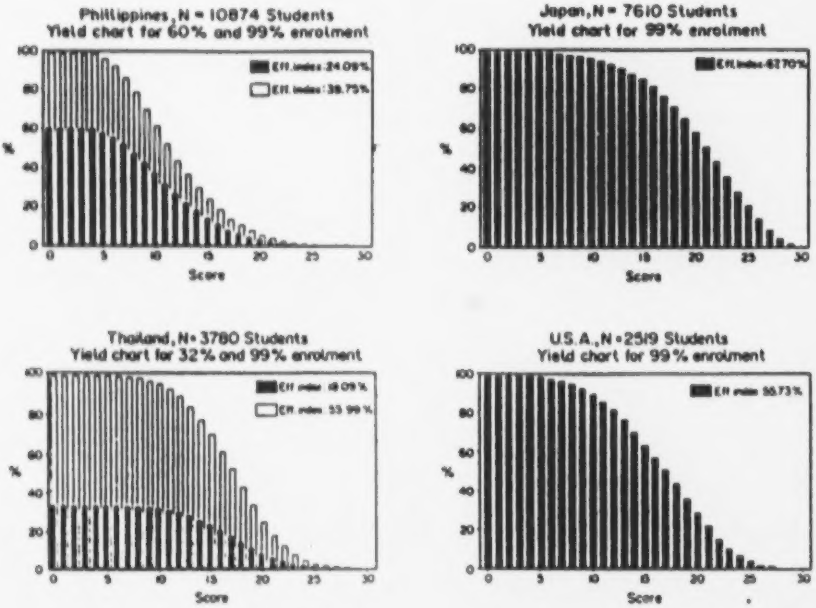

Figure 4: Yield curves of four countries (Grade 9, science)

all questions would have an index of 100 per cent. It can be seen that, on the basis of pupils in school, Thailand and the USA have very similar indices (55.99 per cent and 55.73 per cent). When the fact is taken into account however that only 32 per cent of an age group is in school in Thailand, the index declines to 18.09 per cent: the yield is much lower. (This assumes that those not in school would have scored zero which is obviously not true but since those not in school were not tested it is impossible to make an estimate of what they do know.) The comparison of 'achievement yield' indices does then allow a comparison of how many learn how much. In the case of Thailand it could be an argument for increasing the proportion of an age group in lower secondary school and it is perhaps not surprising that the Thai authorities have now taken steps to increase the proportion of an age group to about 50 per cent.

The Philippines on the other hand, has 60 per cent of an age group in school at Grade 9 level, but it is clear that more emphasis is needed in that country on improving the quality of education at that level before expanding enrolment. Japan's yield curves are presented simply to give an idea of what is possible in a relatively high achieving country.

2.5 Equality of educational opportunity

In any system of education there are achievement differences among schools and there are achievement differences among pupils. The question arises as to what extent the differences among schools account for the total differences among pupils. In some school systems there will be little difference among schools and most of the variation in achievement will be among pupils within schools. In other cases, the variation will be mostly between schools with relatively small differences between pupils within schools. An index known as ROH can be calculated which describes the between to within school variation in achievement. In Scandinavian countries the between school variance accounts for as little as 2 per cent of pupil variance and is always less than 10 per cent. To take Sweden as an example this means that it makes very little difference in terms of achievement which school a pupil goes to. This is not the case, however, in many developing countries where the between school differences can account for 30 per cent of the pupil differences at grade 6, 50 per cent at grade 9 and 60 or 70 per cent at grade 12. It makes then a great deal of difference to which school a child goes.

In some cases these between school differences are associated with urban-rural differences. In many cases, also, it can have to do with teacher qualification and motivation, and with availability of resources. If children are to be given equal opportunities it is crucial that countries with large differences among schools undertake regular surveys to identify the differences in teachers and resources and try to redress the balance through differential allocation of resources.

This section has cited results from some studies of national achievement in different countries. There are other examples of national surveys of achievement (the 6th, 9th and 12th grade surveys of achievement in Indonesia, the primary school survey in Malaysia, the secondary school survey in Thailand) but studies, so far, have focused more on factors affecting outcomes rather than on measurements of actual levels of achievement. This evidence is still sparse especially in African countries.

The World Bank policy study on Education in Sub-Saharan Africa (1988) cites some quite distressing results from a test administered to fifth grade students in one francophone African country: "Students in primary education in this country are learning virtually no mathematics" (p. 33). Many more surveys need to be undertaken by countries and reported. They have two major useful outcomes. They identify which objectives in the curriculum are being poorly achieved and which factors are associated with differences among provinces or regions, differences among schools and differences among pupils. These studies should be undertaken and carried out locally and their results should become part of the information policy makers and planners should have at their disposal.

Part III

Factors affecting pupil achievement

From studies examining the effects of certain factors or variables on achievement what do we learn? This section attempts an overview of some of their major findings. The disentanglement of the effects of variables on achievement is not an easy matter. The results of correlational research need to be tried out in experiments. Any one result needs to have occurred several times before one is sure of one's ground. Hence, the use of meta-analyses — analyses of analyses. From various World Bank and IEA analyses a number of 'alterable' variables can be identified.

Before presenting them one word of caution is in order. The meta-analyses mentioned above, which make it possible to identify patterns of relationship across societies, do not by definition take into account structural and cultural determinants of variations in achievement. Before defining the policy for one specific country, it would be useful to have at one's hand the results of a survey carried out there. Moreover, quantitative macro-level studies should, whenever possible, be complemented by other more qualitative type research. These, based on observational methods and interview techniques, allow the researcher to pick up nuances and identify variables operating in classrooms and influencing achievement, which cannot be otherwise identified.

The following alterable variables have been selected for presentation.

3.1 Curriculum

The curriculum can be differentiated into 'intended curriculum' (what is in the syllabus or lists of learning objectives), 'implemented curriculum' (what the teachers actually teach; in research jargon this is often known as 'OTL' or Opportunity to Learn), and 'achieved curriculum' (what the children actually learn). There is much evidence to show that the curriculum demand has an impact on achievement. In short, if pupils get the opportunity to learn something they usually do so; if they do not get the opportunity they cannot learn it. In other words, the more that is demanded in the 'intended' curriculum — other things being equal — the more the children will learn.

Many developing nations have curriculum development centres. Although many curricula have been made 'national' to remove the influence of the ex-colonial power's curriculum, it is the case that either certain other nations' curriculum programmes are used (e.g., Nuffield Science, SMSG, etc.) or at the other end of the spectrum, not sufficient attention is paid to what other nations demand of their children — particularly in reading, math and science. The African Curriculum Organisation and organizations such as the Science Education Programme for Africa (SEPA) — based in Ghana — have done much to try and improve curricula, but much yet remains to be done.

There is a technology of Curriculum Development (Lewy, 1978) and there are certain determinants of the curriculum which must be taken into account. Many require small studies. Curriculum Centres must pay attention to these.

There has been a tendency to add more and more to the curriculum but never to discard anything. Lately, there have been moves to trim back the curriculum as though it is the cause of poor standards. The curriculum should be trimmed, but with care. Attention should be paid that at a minimum the school teaches what school leavers will need to start working. Students should also have the basis to be able to continue to learn and grasp quickly the content of whatever training he/she might follow upon leaving school or later on.

Various programmes have been tried out, combining education and productive work, or introducing pre-vocational subjects into the curriculum. The evaluation of such programmes seems disappointing as far as solving the unemployment problem, encouraging self-employment of school leavers or raising resources are concerned (Psacharopoulos and Loxley 1985, Lauglo 1985). Some studies suggest, in fact, that what is potentially most useful to self-employed adults in urban or rural areas are literacy and computational skills, agricultural and/or some scientific knowledge. Pedagogically some of these vocationalized programmes seem nonetheless to have had interesting results, as long as teachers were very motivated and knew how to integrate the teaching of practical subjects with the teaching of more theoretical ones making the former supportive of the latter. Their success, in fact, depends a great deal on the resources available.

This is often the case; curricula are often accused of being the cause of bad achievements. Causation is however usually multi-faceted, and poor teacher knowledge is clearly a problem in some countries as to why the curriculum is failing.

The language of instruction and the language in which the instructional materials are written is a further problem. Nigeria, for example, adopted — after independence — English as the language of instruction in school starting at grade one. A child in the Yoruba speaking area will learn his local language first, then Yoruba and then enter school to be instructed in English (somewhat akin to an English child entering grade one and being taught in Japanese). There have been studies in the Yoruba and Hausa speaking areas of Nigeria where it has been shown that children learn more when being instructed in Yoruba and Hausa than when being instructed in English. But, to change or rewrite all instructional materials into Yoruba or Hausa is a costly undertaking. It can also become a political issue, as some groups may resent the use of the language of another group. Thus, this problem remains in many countries.

Finally, national examinations should reflect what is in the curriculum because teachers teach according to what is in examinations. In all the activities the curriculum centre should play a crucial role.

3.2 Books and materials

Where there is a shortage of books and materials, achievement is lower. Providing one book per child (and ensuring that the books reach the schools and are used by the teachers and pupils) increases achievement and retention rates. Indeed, in the Philippines when the number of books provided to primary school classrooms changed from ten pupils to one book to two pupils to a book, the proportion of students achieving at 'grade level' rose from 50 to 70 per cent in one year (World Bank, 1986b).

Fuller (1986) indicated that a shortage of textbooks was more of a problem in some subject areas than in others; but it always has an effect on achievement. The major problems are how to produce sufficient text books (or even loose-leaf files) at a cheap cost and, at the same time, to ensure that the materials reach the pupils in the schools particularly in rural areas. Studies on textbook distribution in Nigeria and Indonesia have pointed to the types of problems which occur and remedial action has now been undertaken. Again, it is not enough to print textbooks, one has to make sure that the materials actually reach the schools — which is an administrative problem — and that they are used by teachers — a pedagogical and administrative problem.

Connected with instructional materials is the availability of books through a school library. Both Fuller and IEA have reported that the more books are borrowed from a school library the higher pupil achievement and, in primary schools, the more a classroom corner collection of books is available the higher reading achievement.

3.3 Teachers, teaching and teacher training

There has been much research on methods of teaching and what it is that teachers do which improves learning and achievement.

3.3.1 Teachers' experience

Teachers with more teaching experience tend to develop stronger instructional and classroom management skills. They reduce the amount of time spent on administrative procedural matters in the classroom, are quick at restoring order and develop a tempo of teaching which fosters more 'time on tasks' on the part of the students (Anderson et al., 1988). The implication of this is that all efforts need to be made to allocate experienced teachers equally between urban, peri-urban and rural areas and to reduce turnover. This is linked to the question of salaries and status raised earlier.

3.3.2 Lesson preparation and marking

Teachers who spend time preparing lessons and marking homework and class work tend to achieve better results with their students than those who do not. If teachers do not have to work to earn extra money and if teacher training stresses this point then this should help improve learning.

3.3.3 Skills

Teachers who are perceived by their pupils to demand a lot of them (high teacher expectation of pupil work), who are quick in keeping order in their classrooms, who organize feedback in a systematic way (feedback in the sense that the teacher (and pupil) knows exactly what an individual pupil has learned and has not learned, of that which was to be learned), who use correctives (help children to learn that which they failed to learn the first time), and who help the pupils to structure the more important learning tasks from the less important tasks, tend to produce higher achievement in their pupils than those teachers who are not perceived to do these things (Anderson et al., 1988; Nitsaisook and Postlethwaite, 1987).

Some dedicated teachers are able to inspire children to learn in the most deprived areas. Avalos (1986), in her study in four Latin American countries has called these the 'Senora Rosa' teachers. More intensive studies of these kinds of teachers are required in order to identify exactly what they do which results in good achievement in disadvantaged children.

3.3.4 Teacher education

- General Education. IEA (Peaker, 1976) has shown that teachers with more post-secondary education achieve more with their pupils than teachers with less post-secondary education. Such a finding, however, gives little solace to the educational authorities in countries with falling educational budgets and growing enrolments where one year crash courses have to be organized for pupils finishing junior or senior high school so that they can start teaching in secondary schools.
- Pedagogical training. Passow et al. (1976) found no difference in pupil achievement according to the different length of teachers' pedagogical training. This result points to the problem of the content of pedagogical training. Which teacher activities are required for the teaching/learning of different types of educational objectives in different subject areas? Some results about teaching practices which result in more learning on the part of pupils were given above. It is from such studies that the content of the pedagogical part of teacher training should be derived. The amount of time devoted to pedagogical training can be pared down but only on condition that there is a strict selection of that which is essential.

In-service training is typically of two types: a week's course, or what is called on-service training. In the latter the teachers teach during the week but meet one evening per week (or on a half-day at the week-end) with other teachers from neighbouring schools (a cluster of schools) at a teacher centre (often a room in a school). They meet not only with each other to discuss common problems but also with a supervisor or a master teacher. It is often said that the first type of course (in-service teacher training) is worth only twice its own length. That is to say that if it is a one week course the teachers revert to how they taught before the course two weeks after having returned to their school. Flügger has produced initial results showing that on-service training courses produce longer term effects on changes in teacher activities (and cognitive learning) than do in-service teacher training courses. Again, however, more research of this kind is needed before general conclusions can be drawn.

There are some countries where in/on-service teacher training is not compulsory. The IEA results indicate that where teachers have undergone in/on-service teacher training and where such training has involved practical activities (e.g. producing instructional materials, constructing assessment instruments) the pupils learn more than under teachers who have had no such in/on-service training or under teachers who have been to in-service courses of a theoretical nature only.

Many countries have a set number of school days per year but let the pupils off while the teachers undergo in-service training as part of their regular duties, i.e. without extra pay. Other countries, on the other hand, pay their teachers an honorarium for attending in-service training over and above their travel and subsistence costs. This can be an expensive precedent.

The suggestion is that in/on-service training should be compulsory without extra payment to teachers, that the courses be given a practical bent and that more emphasis should be placed on on-service training.

3.4 Time at school and homework

Allocated instructional time is important. In general, the more time children study, other things being equal, the more they will learn. The number of school days per year ranges from 120 to 240. The number of instructional hours per day ranges from two to seven. The age of entry to school varies from four to seven (or even more) years of age. Hence, even for those children remaining in school up to say 14 years of age, the difference in instructional hours can range from 4,000 to 10,000 (Passow et al, 1976).

It is the real number (rather than the paper number) of hours of instructional time that is important. There are many countries where officially there may be say, 240 school days per year, but in effect 30 are given free because of local public holidays, visiting dignitaries, and teacher absence (for whatever cause e.g., illness, death or marriage in the family, teacher attending course, etc.); thus the real number of days is much less (210 in this case). Teacher attendance at school is another important problem. In some countries measures have to be taken (involving, for example, the community or the parents in the management of the school) so that teachers actually turn up in schools for the lessons they have to teach.

Per subject matter, it is the cumulative number of hours studied which is important, i.e., how many hours per week for how many years, but again there must be a point at which a plateau begins. More information is needed here. Carroll (1975) suggested that, for a pupil to become proficient in reading comprehension in French as a foreign language, an average of six years of continuous study (i.e., four or five periods a week) for about 40 weeks a year would be needed. If the motivation of the pupils were very high and the teaching very good, the six years could be reduced to four years but not less than that.

Another aspect of time is 'time-on-task' — the amount of time within a class period that is actually devoted to the teaching/learning which should take place and the amount of time each pupil actually spends on learning (as opposed to, for example, day-dreaming). There is a growing body of research to indicate that, other things being equal, the more 'time-on-task' the more the pupils learn. Much of this has to do with the structuring of the time within the period and the tempo at which the teacher conducts the class. Both of these aspects should be dealt with in the teacher's pre-, in- and on-service training.

Finally, homework is important. Pupils doing homework learn more than those doing no homework even if it is not marked. If the homework is marked and gone through individually with each pupil, to help him/her see his shortcomings and how to improve them, then the children learn much more. It goes without saying that if the teachers are not motivated or if they have other activities, the probability of the homework being marked is low.

3.5 School organization and facilities

- School size. No significant differences in pupil achievement have been found in terms of school size (Fuller and IEA, ibid). Where population density allow it, it should be possible to increase school size but on condition that school principals receive appropriate training.
- Class size. In general, students in smaller classes do not achieve more than students in larger classes except in classes of fewer than 15 students in which the teachers individualize the work. Again, in general, achievement tends to be less in classes over 45 in industrialized countries and over 55 in developing countries. But in between-country comparisons (IEA, 1988), Korea with an average of 60 students per class, and Japan with 42 students per class, were first equal in a comparison of Grade 5 students in 15 countries. Hence it is not the class size per se that is important. It is what happens in the class and how it is organized that is important. Nothing is known of the achievement of class sizes greater than 60, but it could be envisaged to have this number as a maximum size, always of course on condition that the classrooms are big enough for 60 and that the teacher knows how to teach in these conditions.

One problem that exists is that teachers within a country are normally trained to cope with classes of what is perceived to be an average class size within that country. It is important to recognize that if class size is increased then the teachers must be taught how to manage (and arrange the teaching) for larger sized classes. They must also be motivated to take on larger classes. To do this is not an easy matter.

- Double and treble shifts. Double or treble shift systems help to increase enrolment with no extra capital cost. The pupils' level of achievement does not seem to be impaired on condition that, whichever shift the pupil is attending, it is always the teacher's first shift.

However, many teachers do teach two shifts (often in two different schools) in order to earn extra money and most parents prefer their children to go to the first shift when it is cooler and their children are fresher. At the same time, though several countries have moved from a one shift to two or three shift system, it does not seem to have affected their results too much. It would be very useful to have information accumulated on the pros and cons of different shift systems.

3.6 Urban or rural schools and staffing

In many countries there are large urban-rural differences in educational achievement. Occasionally these are in favour of rural areas with large city slum areas performing poorly but, for the most part, the rural areas perform worse than urban areas.

Two points deserve mentioning. The unequal allocation of resources to the different schools have effects on achievement (cf. point made about ROH in Part II). It is a relatively simple matter when undertaking the collection of school census data to have a count of the number of desks and chairs per pupil, the number of useable blackboards per classroom, the number of classrooms with mud, bamboo, wood or cement floors, the lighting per classroom, the classroom practical science equipment (or even in richer countries the laboratory space and usage per pupil) and so on. Where this kind of basic information is lacking at the district, regional and national levels it is imperative that it is collected, at least once every five years. If school census data are not collected then surveys using a probability sample of schools could be undertaken. The data should be analyzed and remedial action should be taken to make school provision more equitable. Communities could be asked to contribute, but so should aid agencies as well. There is much to be learnt from India's national policy on education and 'operation blackboard': essential facilities such as two reasonably large rooms, blackboards, maps, charts and other learning material will be provided to all primary schools.

There are special problems experienced by schools in isolated areas. One is that the schools must be small and often with only 3 teachers – and sometimes one teacher only – teaching six grades at primary level. Teachers should be trained to teach in these conditions. This is rarely the case in developing countries and much is to be learned from the experience of developed countries. A second problem is how to attract good teachers to rural (often isolated) schools and keep them there (see Chivore, 1988). The unwillingness of trained teachers to go to and remain in rural areas is well known. The quality of teachers going to rural schools is often associated with differences in achievement. Monetary reward and free housing systems can be expensive and are not always sufficient. In a recent IIEP training course (1987-1988) the Thai participant recounted a Thai strategy: send only young male teachers for two years, followed by young female teachers for two years. Then, they marry a local and stay there. The system, she reported, worked well.

The role of the school principal is crucial. Fuller (1986, ibid) has indicated that the role of the school principal is often conditioned by the school type (academic, vocational) and the culture attached to it. The school climate also depends a great deal on what is demanded by them. The formal training of school principals, once they have been selected, has positive effects on the way they run the school and should be undertaken – probably as part of in- or on-service training. The cost of such on-service training is negligible except for the team working out what the content of such courses should be and the preparation of the necessary materials. This content should, of course, be worked out nationally and great care should be exercised when examining what the content of such courses is in other, especially industrialized, countries.

In areas where many parents are either illiterate or semi-literate, school principals can institute programmes of teacher-parent workshops in which the school inculcates in the parents various behaviours such as asking their children to read to them, or tell the parents what they have just read about. Such programmes can have dramatic effects on the reading achievement of second and third grade pupils classified as poor readers (Sawadisevee, Jiyono and Nordin, 1982). Many initiatives have taken place which would be worth recording and summarizing. In all of these initiatives the school principals' roles have been important.

3.7 Distance education

When distance education programmes using radio or correspondence as supplemental to classroom instruction is well developed and implemented it can have an effect in increasing achievement (McAnany et al. 1982).

The initial production of curriculum and classroom lessons is costly. The delivery to pupils can be efficient in terms of per pupil costs. However, as McAnany et al. emphasize, it is important that each component be tested out and, where necessary, revised before the programme is implemented. When the exercise is undertaken too quickly and without proper trialling, no effects on achievement can be seen and the initial production costs will have been wasted.

A comment. There are many factors[7] which influene learning and more research has been undertaken than we have been able to recount here. As research progresses it is important to be able to synthesize from research what we know about the effects of different factors. It is important to have information on which factors have a positive influence, which have no influence, and which have a negative one. There is much mythology in education about the influence of different factors. Meta-analyses help in the demythologisation of education.

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[7] Often, policy-relevant variables are omitted from research studies. *Appendix II* presents a list of indicators for school systems (Mosha, 1988). Windham (1988) has also produced very good lists of indicators. In the design of studies, the variables (indicators) to be used must be very carefully thought through.

In addition, it is essential that each nation has a mechanism for judging the 'health' of its educational enterprise and for planning purposes.

The parents and teachers need information on how Johnny or Mary Amina or Mohammed, is performing in various aspects of each subject area in order to know where more effort is required for each pupil. The school principal needs to know about the relative strengths and weaknesses of each class in the school (and about sex differences) as well as how his/her school's performance at any one grade level compares with other similar schools. The principal must plan the overall activities in the school and must have this information to plan next year's activities; the district or provincial officer needs information on how each school is performing, on urban-rural differences and the like, to know where extra inputs of resource will be useful. The national planning office needs to have information on the relative performance of the different districts and provinces in the country and information on what factors (location, plant, books and equipment, teacher education, teaching quality, school principal management, etc.) are associated with achievement differences in various subject areas between locations and schools. The planning office also needs to know how well school learners integrate into society, how easily they find work and what are their contributions to the economic and social development. This, however, goes beyond the scope of this paper.

It is possible (Ross and Postlethwaite, 1988) to collect such data and provide them to the various levels of decision-makers through regular monitoring exercises. Where systems of education do not have information on such basic facts as the number of children per school/class, number of classrooms, book provision, desk provision and the like, it is easy to collect such data in the course of such monitoring exercises.

Where there are large differences in provision and practices from school to school, or district to district, it is possible to assess the effect of these differences on outcomes of schooling such as achievement, attitudes, and skills. This is the type of information required by planners for their planning. At the same time, it is useful for systems to have comparative international data on their national achievement levels in order to see the magnitude of differences with other countries (especially with countries of similar economic standing) and how the magnitude of differences within their own compares with the magnitude of differences in other countries.

Without regular monitoring, it is impossible to know the 'health' of the system. A monitoring unit will typically cost 0.5 per cent of the primary and secondary school budget.

Part IV

Tentative conclusions

Schooling will not necessarily be improved by manipulating a few qualitative variables only. In some instances, the improvement of the teaching/learning process may require rethinking of the very purpose, organization and length of schooling. In addition, many variables outside the school system influence pupils' achievement. These include, for example, the children's nutrition level, parents' attitudes, and their educational level, as well as the way they interact with the school. Bearing in mind, nonetheless, the poor state of the teaching/learning conditions in many countries and bearing in mind the financial constraints, what suggestions might be made which are realistic? There are cases where a piecemeal approach modifying, not one single variable in isolation, but a whole mix of variables can be useful. Opinions will differ since the interpretation of results is a function of the memory, testimony, and introspection of the interpreter. What follows should be seen as suggestions to improve the teaching/learning process within the school. They are made in a provocative way and need to be discussed.

1. Larger classes: the suggestion is that class size could be increased to 50 on condition that the teachers be trained to deal with larger class sizes and on condition that there is little variation in the country around the average class size adopted. This size will lower the per pupil cost and allow more children into school. It is recognized that the feasibility of this measure depends on the population density; where population density is low, smaller class size will have to be defined. Also, where school classrooms have been built to hold only 30 or 40 this will be a problem.

In urban areas, it is possible to increase school size (probably up to 2,000) without detrimental effects on achievement but, again, on condition that school principals and teachers are trained for the management of larger schools. Maintenance expenditures will increase, but, nonetheless, such a measure should reduce per pupil costs (recurrent and capital).

2. Desks, blackboards, instructional materials: attempts must be made to ensure that a desk place for each pupil exists, that each classroom has a useable blackboard (i.e. not so worn or shiny that the pupils cannot read from it) and that each pupil, or groups of two pupils, have instructional materials (textbooks, workbooks, loose-folders) when working. There is sufficient evidence to show that these are essential prerequisites for learning. No matter how good the teachers are, they will have a limited effect without these prerequisites. If class and school sizes are increased, the saving on the per pupil cost could go to providing these prerequisites.

The industrialized world could be challenged to identify cheaper ways of printing instructional materials. But preferably, developing countries should get together and co-operate on the preparation of teaching materials to be produced locally.

3. Remotivation of teachers: many teachers are demotivated, poor, and have low status in their communities. Action needs to be taken to remotivate them. It is obvious that whatever effort is put into other items — distribution of textbooks, blackboards, curriculum reforms — they will have little impact, if any, if the teachers are not co-operating, or if they are absent. Governments can initiate propaganda systems to enhance the status of teachers as key persons for teaching children. Teachers can be asked to play other roles in the community. Their self concepts can be raised through teacher training. Something has to be done with respect to their salaries as well. Where salaries in real terms have decreased so sharply that no teacher can hope to survive on his/her salary only, corrective measures have to be taken. In as much as possible, pay differential vis-à-vis other groups in the Community should be kept.

All measures aiming at organizing teachers in a team or in a community — such as clusters of schools — should be encouraged, as innovation is often the fruit of a co-operative effort. This requires training and redefining the functions of school principals.

4. Teacher training: although more pre-service training would be desirable as seen from some of the evidence put forward in Part III above, it is beyond the financial resources of many countries to undertake this. But, pre-service, however short in duration, is essential.

Compulsory in- and on-service training is desirable. It can be organized so that it does not cost more than at present. It is the content which should be changed to take into account some of the facets of teaching, mentioned in Part III above, for which there is evidence that they are effective in improving learning and achievement. It is through good in- and on-service training that the teachers can become excited about the challenges they have, how they can help children to learn more and how they can help in the community.

Planning the content and the production of some materials involves a cost but the running of on-service training within clusters of schools or at teacher centres does not necessarily involve a cost to the State. This is on the assumption that participants are not paid for participating in on-service training.

5. Instructional time, homework and time on task: real instructional time within the year can be increased. It is suggested that the school year could be increased to 40 weeks of 5 and a half days per week (i.e. 210 school days) with an average of six hours of instruction per day in secondry education. The implementation can be tricky because of teacher resistance but some countries have done this. It would be useful if the various political and administrative procedures on how this has been done should be

summarized and widely disseminated. In countries where enrolment ratios in primary education are still low, more flexible forms of education — part-time teaching, shorter length of cycles — could be undertaken, provided that other measures to increase the quality of schooling are taken. Homework is associated with increased achievement. It is important that it takes place in greater amounts as pupils ascend the school system. Finally, it is always possible to make learning an exciting rather than a dreary experience. How this is done should form part of in- and on-service teacher training, since it is important for effective learning to have all children interested and paying attention throughout the lesson. It is possible to increase time, homework and time on task without involving extra costs.

6. School management: school principals should undergo in- and/or on-service training. Some of the content of such courses (e.g. ways of motivating teachers, organizing the timetable, obtaining and allocating his budget, working with parents, making the school an integral and positive force within the community, etc.) has been suggested in Part III above.

7. Curriculum: as society changes, so must the curriculum be changed to adapt to the needs of the society and to the needs of the individuals. Content must be revised and renewed. The accompanying teacher manuals must include suggestions on teaching methods for different educational objectives and on how to make the teaching/learning experience an exciting one.

Curriculum centres exist in many developing countries. It is their task to monitor the economic changes, the social changes, and the changes in the perceptions of parents and teachers as to what should form the content of the curriculum. At the same time, they must be aware of changes in the curricula of other countries in an increasingly interdependent world. It is important that they do not continuously add to the curriculum; they must also trim it.

Feedback and correctives (see Part III) are important components of the teaching/learning process. Several curriculum centres produce materials (such as tests) for the teachers to use and obtain feedback on the extent to which each child has learned each educational objective. Similarly, curriculum centres produce remedial materials which comprise a large part of the correctives process.

A curriculum centre typically costs 0.5 per cent of the primary and secondary school budget. It is difficult to imagine how some countries manage without such centres. It is necessary for curriculum centres to be revitalized and stimulated from the outside with ideas of the practices of other national curriculum centres and of theoretical ideas.

8. Monitoring the 'health' of the system: Without collecting census data from schools and without having periodic checks on how well children are learning what they are meant to be learning, it is impossible to be aware of the strengths and weaknesses of the teaching/learning process in different schools, districts, regions and the nations as a whole. Not only is it

possible to identify the weaknesses but it is often possible to identify the causes of such weaknesses through small research projects.

The establishment of a monitoring unit is essential. But, the staff needs to be trained and retrained. In many cases, where such units exist, the latest research techniques are not learned because the relevant journals and books cannot be purchased due to lack of funds. Again, this is an area where international aid can help in providing mechanisms not only for the provision of journals and books to poor countries but also by ensuring that international intensive courses are run to update knowledge.

9. Many of these suggestions will require some increase on educational expenditures in real terms. It must be emphasized that every effort should be done to halt the decline in expenditure and wherever possible increase it.

10. Agenda for future research and training activities: the number of tasks to be undertaken by international agencies are manifold. However, it is suggested here that some practical tasks have high priority if the teaching/learning condition is to be improved in many countries. The tasks mentioned above are listed below:

(a) Produce short state-of-the-art reports on:

- proven effective ways of increasing class and school sizes;
- proven effective ways of enhancing the status of teachers;
- the relative effects of different forms of in- and on-service teacher training programmes;
- political and administrative procedures for increasing instructional time.

(b) Organize a series of international intensive courses for the revitalization of:

- curriculum centre personnel;
- monitoring and research unit personnel.

As with all endeavours, they must be done well to succeed. Money alone will not solve problems. It is the foresight, intuition, dedication and perseverance of those responsible in undertaking the above ten tasks which is crucial.

Appendix I

Proportion of repeaters in some African Countries

	1975	1980	1983
Primary Education			
Benin	21	20	29
Burkina Faso	17	17	17
Côte-d'Ivoire	21	20	26
Mali	23	30	31
Senegal	na	16	15
Togo	29	31	36
Cameroon	25	30	30
Central African Republic	35	35	35
Zaire	21	19	19
Burundi	26	30	14
Congo	26	26	33
Ghana	2	2	na
Kenya	5	9	na
Uganda	10	10	10
Malawi	16	17	16
Botswana	3	3	6
Secondary Education			
Benin	14	9	35
Burkina Faso	15	14	15
Côte-d'Ivoire	13	12	16
Mali	22	na	na
Togo	15	28	30
Cameroon	11	19	17
Congo	17	33	--
Central African Republic	16	25	--

Source : Bulletin régional des statistiques de l'éducation — BREDA STAT — Unesco 1986.

na : not available.

Appendix II

- I. **Global level**
  - (a) Explicitness of policies and coherence of strategies for implementing them
  - (b) Quality and stability of bureaucrats, technocrats
  - (c) Competitiveness of posts, recruitment procedure, motivation, retention, transfer and turnover-rate
  - (d) Financial and material commitment
  - (e) Curricula – soundness in terms of relevance and balance

- II. **School level**
  - (a) *Quality of the physical plant*
    - (i) Safe buildings which are conducive for teaching and learning at all times
    - (ii) Adequate desks, chairs, tables and cupboards
    - (iii) Cleanliness – classrooms, workshops/offices/staff quarters (if any), washrooms, school compound
    - (iv) Optimal and educative use of space
  - b) *Good administration*
    - (i) Favourable working climate
    - (ii) Cohesiveness between administration/staff/students/community
    - (iii) Sound plans, well organized
    - (iv) Co-operation
    - (v) Involvement
    - (vi) Free flowing communication
    - (vii) Leadership qualities espoused
    - (viii) Regularity and fairness of evaluation
  - (c) *High quality teachers*
    - (i) Well-trained, competent
    - (ii) Motivated to teach well
    - (iii) Satisfied – salary (amount and timely pay), housing, posting, nature of work, and terms of service
    - (iv) Have appropriate attitudes and values of training pupils for further education and for life
    - (v) Hard-working – punctual, prepare work, spend time to make corrections, use a variety of methods and teaching aids
  - (d) *Adequate teaching/learning materials*
    - (i) Teachers' guides/charts/chalk
    - (ii) Textbooks/copy books/pens/pencils, rulers
    - (iii) Other essential apparatus and equipment
  - (e) *High level of performance by pupils*
    - (i) Literate and numerate
    - (ii) High interest and enjoyment in all subjects
    - (iii) Like school – regular attendance, desire to succeed in all school activities
    - (iv) Cleanliness — body, clothes, a cleanliness mentality
    - (v) Good character (highly disciplined)
    - (vi) Value further education
    - (vii) Positive attitudes of living and working in one's community if not selected for secondary education
  - (f) *Outstanding performance in school projects*
    - (i) Application of knowledge and skills gained in classroom
    - (ii) Serve as a core of instruction
    - (iii) Development of co-operation and leadership initiative
    - (iv) Use of local inputs (animal/compost manure, materials, skills)
    - (v) Ability to serve as a model in the locality
  - (g) *Outstanding performance in extra-curricular activities*
    - (i) Awards gained in sports, games, clubs and associations
    - (ii) Amount of preparation involved
    - (iii) Amount of skills used
  - (h) *Success in preparing students for life*
    - (i) Changed attitudes and values
    - (ii) Knowledge and skills
    - (iii) Materials and equipment to start life
    - (iv) Enabling the community to accept him as a non-failure, and assign him a useful role to play
  - (i) *Cordial school-community relationship*
    - (i) Co-operation – expressed in joint activities
    - (ii) Cohesiveness – in solving disciplinary, attendance or resources problems
    - (iii) Learning from each other's experiences
  - (j) *School as a resource centre*
    - (i) Advice to the community
    - (ii) Supply of inputs within their capability

Source : Mosha, Herme Joseph (1988), 'A Reassessment of the indicators of primary education quality in developing countries: emerging evidence from Tanzania', International Review of Education, vol. 34, No. 1, p. 43.

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Universities and development in Africa: problems and challenges for planning

Miala Diambomba[1]

Introduction

African higher education is being called to account, and has been for several years. When African countries were gaining their independence, university education was considered to be one of the keys to their economic and social development. Since the management problems experienced by these countries during the first years of independence were often ascribed to a shortage of adequately trained national cadres, it was generally assumed that expanding university education, and consequently increasing the number of post-secondary graduates, would contribute to improving the living conditions of local populations.

This is why substantial resources were and continue to be invested in higher education.

However, more and more questions are now being asked about the advisability of making these investments. In the light of the experience of recent years, people are wondering whether higher education can, in its present form, be a key to development in Africa. It has in fact been realized that the increase in the number of graduates since the sixties has not resulted in an improvement of the economic and social situation. On the contrary, macro-economic indicators are on the decline, seeming to indicate that the increase in the number of people with university training was accompanied by the opposite trend in the economic and social situation.

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We have few empirical data measuring the impact of higher education on development in Africa. Hence all this questioning is mostly based on the results of studies conducted elsewhere. These studies generally show that the rate of return of higher education is relatively lower than that of primary and secondary education. Even though this sort of comparison raises problems of interpretation, in that assessing the effects of education by the rate of return would seem to suggest that education's only function is economic, these studies nevertheless provide indicators that are useful for evaluating the effects of investments in education.

The negative relation between the rising number of graduates and macro-economic indicators trends does not necessarily mean that one is the consequence of the other. Declining economic activity can be attributed to a multitude of factors. Higher education is being called to account, because of the awareness that, given its extremely high cost and the equally high salaries received by its graduates, it absorbs more resources than it produces. It is accused of having contributed to the impoverishment of Africa, instead of having acted as a driving force. The fact that the rising number of highly educated cadres in the Civil Service did not prevent the deterioration of public services is quoted as one of the illustrations of this situation.

In this monograph, we assume the thesis that higher education's contribution to development in Africa is less than what it could be, and we try to identify the underlying reasons for this situation.

Traditionally, universities have three main functions in modern societies: (1) to train high level cadres; (2) to train the administrators and teachers needed for the internal functioning of school systems; (3) to transmit knowledge and to advance its frontiers.

We intend to demonstrate that the contribution of African universities to development is weakened by the fact that their action is limited to the first function, that is, the production of cadres, and that, even in this respect, their results are mixed, because the accent was put on quantity rather than quality.

Finally, we shall learn the lessons of this situation for the prospects of higher education in Africa, and for its future role in the planning of education.

Before examining these issues, we present the highlights of the evolution of higher education in Africa since the sixties. The data we refer to are mainly taken from French-speaking Africa, but the conclusions apply equally well to other regions of Africa.

I. The evolution of higher education in French-speaking Africa

Higher education in French-speaking Africa has undergone a phenomenal expansion since the sixties.

Before 1960, there were about ten university centres in all of Africa.[2] At the very beginning, these were not even teaching centres, but just branches created by certain metropolitan universities, for the purpose of conducting their colonial research. As far as French-speaking Africa is concerned, it was only in Zaire and Senegal that these centres had been transformed into fully fledged universities before 1960. Thus there were only three universities[3] for the entire region in 1960.

Today all African countries have their universities. The rapid rise in their number has been matched by substantial enrolment growth. In 1960, there were only 4,000 post-secondary level students in all of French-speaking Africa; by 1983 their number was 167,000. The average annual enrolment growth rate was 19% between 1960 and 1980, compared to 12% in the English-speaking countries, in which student enrolment increased from 16,000 in 1960 to 248,000 over the same period.[4]

Despite this strong growth rate, most of the universities are small. In 1983, for example, enrolment varied from 1,000 at the University of Burundi to about 10,000 in the universities of Zaire, Senegal and Côte-d'Ivoire. The small size of these universities is reflected in the student/professor ratio. In that same year, the average ratio for sub-Saharan Africa as a whole was 12 students per professor, and 13 students per professor for the French-speaking African countries. Looking at the data by country, one sees that this ratio is highest in Madagascar, reaching 46 students per professor, and lowest in Mozambique (3 students per professor) and Tanzania (4 per professor).[5]

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[2] In French-speaking Africa, there was the Institute for Advanced Studies in Tananarive, created in 1948, and there were centres in Dakar, Abidjan and Kimmwenza, created in 1956, 1958 and 1948, respectively. In English-speaking Africa, similar centres had been created in Khartoum in 1947, in Ibadan in 1948, in Achimota in 1948, and in Makerere in 1949.

[3] The Lovanium and Lubambashi universities in Zaire, and the University of Dakar in Senegal.

[4] These figures include all students enrolled at the level of higher education, including both universities and non-university institutions.

[5] We will see later that this ratio varies from discipline to discipline. It is very low in the exact sciences and very high in the human sciences.

Given the small size of most of these universities, it is not unreasonable to ask whether it might not be better to come back to the concept of regional institutions, as in the case of the University of Dakar in the beginning. This kind of formula would make it possible to take advantage of economies of scale, and would help to bring training costs down. Such a decline would make it possible, in turn, to increase enrolment, or even to improve the quality of higher education. Despite all the efforts showered on higher education, enrolment rates have in fact remained relatively low. Few countries have attained the 2% rate that was set as the target objective in Addis Abeba in 1961. Higher education is dispensed in Africa under difficult conditions. Universities are short of equipment and students are often without books and other required didactic material, because the prices are so prohibitive that even the university libraries are not adequately stocked.[6]

Table 1 shows the evolution of attendance rates at the higher education level between 1960 and 1983. The trends indicated in the table show that, in general, the countries where the growth of this rate is strongest are those where institutions of higher learning were created recently. There are several reasons for this.

First, these are countries that had flourishing economies in the course of the seventies, such as Côte-d'Ivoire, or that benefited from the sudden increase in the price of oil during the same period, such as Gabon and Congo. Having substantial financial resources, they were in a position to adopt generous higher education policies, both in terms of basic infrastructure investment, and in terms of granting scholarships. Second, these are countries that enjoyed significant inflows of external aid (Eicher 1984). It may seem paradoxical that it was the countries apparently well endowed with resources that received considerable external assistance. This is explained by the fact that these countries were considered by donors to be of strategic importance.

Third, these are also countries where an intense effort to promote higher education was justified, in that they were behind in the training of senior cadres. As is well known, most African countries launched programmes to Africanize cadres, precisely at a time when the shortage of trained personnel made it difficult to implement such programmes.

It is partly because of this last reason that attendance rates are a bit higher in French-speaking than in English-speaking countries. The level of development of higher education was lower in the French-speaking countries at the outset, which incited them to adopt more generous post-secondary policies. Whereas the beneficiaries of educational services in

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[6] There has not been a lot of interest displayed in the relation that exists between the absence of didactic material and the high failure rates at universities in Africa. Yet the scope of this problem and its social repercussions require that someone take an interest.

Table 1: Evolution of enrolment rates at the higher education level from 1960 to 1983 in several countries of French-speaking Africa

	Enrolment rate			
	1960	1970	1980	1983
Benin	-	0.1	1.3	2.0
Burundi	-0.2	0.6	0.6	-
Cameroon	-0.5	1.5	1.6	-
Congo	0.4	1.7	5.6	6.0
Côte-d'Ivoire	0.1	0.9	2.9	2.4
Gabon	-	0.2	2.2	3.3
Guinea	-	0.6	4.4	3.0
Mali	-	0.2	0.3	0.9
Rwanda	0.2	0.3	0.3	-
Senegal	0.5	1.5	2.8	2.2
Chad	-	-	0.5	1.2
Togo	0.5	2.2	1.7	-
Zaire	0.1	0.7	1.2	1.2

Source of data: Statistical appendix to the sectoral study on education, Education and Training. The World Bank, Washington, October 1986

English-speaking countries bear a relatively large share of the costs of their training, higher education in the French-speaking countries was, until very recently, fully subsidized by the State.

Another interesting and noteworthy feature of the evolution of higher education in French-speaking Africa is the distribution of enrolment by sex. Generally speaking, male enrolment expanded more rapidly than female enrolment. Between 1960 and 1983, the attendance rate of boys increased from 0.2% to 2.7%, whereas that of girls rose only from 0.1% to 0.4%.

The comparison between French-speaking and English-speaking countries shows that female attendance rates are higher in the latter than in the former. In 1983, the proportion of girls in the 20-24 age cohort enrolled in higher education amounted to, on average, 60 per 100,000 inhabitants in the English-speaking countries, but only 40 per 100,000 in the French-speaking countries.

Unit costs at the level of higher education

Despite the low enrolment rate, the cost of higher education in French-speaking Africa is high. In order to be able to take in 1.4% of university age young people in 1980, it was necessary to increase considerably the resources allocated to higher education. In 1975, an average 27% of education budgets was allocated to this level. This proportion declined to 22% in 1980, mainly because of the reduction in budgetary resources resulting from the economic crisis.

The share of higher education in national budgets becomes even clearer if one takes a look at the distribution of education budgets by level. In 1980, for sub-Saharan Africa as a whole, the allocation structure by teaching level of national education budgets was, on average, as follows: 30% at the primary level (for 47,068,000 pupils),[7] 35% at the secondary level (for 8,146,000 pupils), and 22% at the post-secondary level (for 116,000 students). Thus the higher level's share of education budgets is disproportionate, with respect to its relative enrolment.

The imbalance in favour of higher education can be seen even more clearly by examining the situation in individual countries. *Table 2* shows that even the most disadvantaged countries, whose attendance rates are among the lowest, devoted large proportions of their 1980 education budgets to the post-secondary level. In Mali and in Burkina Faso, the resources absorbed by higher education represented, respectively, 21% and 26% of the budgets for education, while respective enrolment amounted to 5,000 and 1,600 students.

It was in Togo that post-secondary had the highest share of the national education budget, namely 28%, or almost one third of that budget in the same year, for an enrolment of 4,800 students.

Thus the table shows that the least 'rich' countries have the highest education budget share allocated to post-secondary. This can probably be explained by the fact that these are also the countries with the lowest level of external aid for higher education.

The historical evolution of this distribution shows that there was an apparent transfer of resources from the primary and secondary levels to higher education. In Mali and in Burkina Faso, higher education's share of the education budget increased, respectively, from 0% to 28% and from 0% to 35% between 1970 and 1980; that of primary education dropped from 65% to 35% in Mali and from 43% to 31% in Burkina Faso between 1975 and 1980.

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[7] We have indicated in another article (Diambomba 1987) that budgets allocated to the primary level in African countries reveal only a tiny proportion of expenditure at this level. This is because a significant share of infrastructure and school operating expenses is borne by the parents of pupils.

Table 2: Percentage distribution by level of the education budgets of several French-speaking African countries

	Primary	Secondary	University	Other
Benin	44	23	18	14
Burkina Faso	31	17	26	26
Burundi	39	35	24	2
Cameroon	41	35	34	0
Côte-d'Ivoire	45	40	15	0
Congo	48	25	24	-
Guinea	31	37	23	9
Mali	33	37	26	26
Mauritania	28	32	12	28
Niger	36	30	21	13
Rwanda	74	14	13	0
Senegal	49	28	19	4
Togo	25	26	28	21
Zaire	39	29	25	-

Source of data: Statistical appendix to the sectoral study on education, Education and Training, The World Bank, Washington, October 1986.

The disproportion between the national education budget shares absorbed by the higher level, and the number of young people with access to such education, was reflected in an extremely high unit cost. In 1983, the average unit cost of a university student in French-speaking Africa was 2,759 dollars. *Table 3* shows the evolution of such costs between 1970 and 1983 in some of these countries. Enrolment growth reduced these costs in certain countries after 1980, but they still remained extremely high.

One can again get a sense of the high post-secondary share of education budgets by comparing relative costs at different levels. In 1983, the average unit cost of a university student in French-speaking Africa amounted to 9 times the average unit cost of a secondary pupil, and 40 times that of a primary pupil. Examining these ratios in individual countries, one notes that the spread between unit costs is greatest in the least 'rich' countries. In 1983, the cost of a post-secondary student exceeded that of a primary pupil by a factor of 66 in Burkina Faso, 33 in Mali, 25 in Togo, and 21 in Côte-d'Ivoire. In the same year, the post-secondary unit cost was greater than the secondary unit cost by a factor of 16 in Burkina Faso, 7 in Mali, 27 in Togo and 5 in Côte-d'Ivoire.

The weight of higher education can also be measured by comparing unit costs with national income indicators. For Africa as a whole, the

Table 3: Evolution of unit higher education costs in French-speaking African countries

	1970	1975	1980	1983
Benin	11 614	3 090	2 167	-
Burkina Faso	-	23 271	5 540	2 540
Burundi	-	3 459	-	3 815
Cameroon	-	-	3 345	-
Côte-d'Ivoire	5 509	7 191	3 293	4 087
Congo	2 307	6 579	2 891	-
Guinea	-	-	1 218	1 197
Mali	1 891	2 517	2 148	1 337
Mauritania	-	-	7 756	10 959
Niger	-	-	-	3 818
Rwanda	-	2 458	3 600	4 354
Senegal	-	2 006	1 849	-
Togo	239	-	2 798	2 879
Zaire	-	2 316	2 271	-

Source of data: Statistical appendix to the sectoral study on education. Education and Training. The World Bank. Washington. October 1986.

average 1983 cost of training a university student amounted to 10 times the per capita income. This ratio was highest in Mauritania, where the post-secondary unit cost was 25 times the per capita income.

In most countries, the amount of a post-secondary student bursary is far greater than the average remuneration collected by most workers,[8] in fact representing the equivalent of a salary. According to some estimates, this amount exceeds the vital minimum required to cover the expenses of a student.[9] A significant proportion of this amount is therefore used to meet the student's social obligations, and allows him to assist members of his family. And yet, until quite recently, such bursaries were considered to be the right of all those who finished their secondary studies successfully.

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[8] The minimum industrial wage provides a monthly income of about 15.000 Francs CFA, whereas post-secondary students receive monthly bursary payments ranging from 21.000 to 45.000 Francs CFA.

[9] It has been estimated in Togo that the amount required for a Lomé student's subsistence expenses is about 7,000 Francs CFA. The difference between this amount and the 21.000 Francs bursary given to students is used, according to these estimates, to meet the needs of members of the student's family or to finance ostentatious expenditure.

These excessively high unit costs constitute the first reason for higher education being called to account in recent years. The second reason is connected with the fact that, despite their privileged position, university students are more demanding than workers. The last and main reason flows from the observation that African universities have not succeeded in fulfilling the mandate entrusted to them by African societies, namely the promotion of economic and social development.

In fact, higher education is meant to fulfill three main functions in modern societies: the training of senior cadres, the training of teachers for both lower levels and universities, and the transfer and generation of knowledge. The general impression is that none of these functions has been fulfilled effectively. In the next section we attempt to shed light on the reasons for this situation.

II. The reasons preventing universities from carrying out their traditional mission

(a) Too close a link between higher education and job markets, the imbalance between branches, and schooling without training

Because of the acute skilled manpower shortage that African countries had to confront at the beginning of the sixties, the main role assigned to universities was turning out trained personnel. They were, in fact, reduced to cadre production machines. However, the experience of the last thirty years shows that they were not able to take on this role successfully, because: (1) higher education was linked too closely to job markets; (2) an enrolment distribution imbalance between the social sciences and the exact sciences was maintained; (3) too much emphasis was placed on quantity.

The link between higher education and job markets

The basic hypothesis justifying the importance attached to education was that it could contribute to the achievement of economic and social objectives. It was also assumed that development could be planned and programmed, and therefore that one could forecast at any time the human resources needed to attain these objectives.

On this basis, econometric models were developed in order to plan the economic and social objectives, and to translate them into human resources requirements, which the educational system was then called upon to train. Few of these models were worked out for African countries, although some attempts had been made along these lines in the English-speaking countries, in particular in Nigeria (Harbison 1962). Nevertheless, most countries created planning ministries and educational planning divisions within their ministries of education. As of the sixties, on the basis of at best mechanical exercises, African countries went about setting themselves lists of economic objectives to be achieved, and categories of human resources to be developed. It was these lists that guided educational policies for the last thirty years.

The manpower forecast models are based on the assumption of a correspondence between academic levels and job market entry levels. Even though these models do not treat the post-secondary level as the only channel of access to high level employment, in African practice this is generally the case. The result was a phenomenon of replacement of less educated, but perhaps experienced cadres by cadres with the requisite level of studies, but sometimes less qualified from the technical point of view.

Educational planning was also influenced by rising social demand for education. The notion that post-secondary graduation is the necessary condition for access to high level employment considerably inflated the social demand for this level of education. Thus it was both to meet the human resources needs of development plans, and to satisfy this strong social demand, that African governments adopted generous higher education admission policies, as of the beginning of the sixties. The result of these policies was a considerable increase in the number of higher education degrees. Between 1980 and 1983, the rate of increase of post-secondary graduates was 70%. In absolute figures, the number of degree holders rose from 41,500 to 70,600.

It is extremely difficult to carry out a quantitative evaluation of employment supply in Africa. Some information on this subject can be found in development plans, but as these are mostly projections based on intentions, such information is not reliable. This is also true of the labour force statistics provided by the civil service. Physical verification of this labour force, carried out recently in several countries with a view to reducing personnel expenditure, revealed the existence of a substantial number of fictitious cadres. One can, nevertheless, estimate the magnitude of this demand and its evolution, because it is known that employment in the formal sector is provided mainly by the civil service and by nationalized enterprises. The public sector accounts for almost 90% of employment in some countries.

This means that the imbalance between the employment demand among higher education graduates and the employment supply, an imbalance that has been evident in certain African countries since the seventies, is caused mainly by the public sector. Not only has there been less job creation in the civil service, but in some countries it has even been forced to cut back its numbers. This imbalance recently became more acute in most countries. For example, it has been estimated that in Mali, only 15% of those who obtained a post-secondary degree in 1986 (about 1,100) were able to obtain public sector employment. Even supposing that some of them could be absorbed by the private sector, it is estimated that, all in all, only 30% were able to find jobs in the modern sector. In Guinea, the authorities decided it was necessary to reduce higher education enrolment by 40%, in order to bring degree production down to a level compatible with the demand. In other countries, the resources set aside for university study bursaries have been cut. In Zaire, for instance, such bursaries have quite simply been eliminated.

But the most common reaction to this imbalance has been to extend the duration of training. This was the decision taken, at the beginning of the seventies, by the authorities of the Faculty of Economic Sciences at the University of Kinshasa, as a way of dealing with the unemployment of their graduates. In order to keep students in the system for longer, a fifth year was added to the usual four-year programme leading to a bachelor's degree. The same tendency is observed in other countries, where the master's degree is required more and more often for employment, that was previously accessible with a bachelor's degree.

In short, even though the proportion of young people educated at the post-secondary level is low in French-speaking Africa, compared to other regions, most African countries are already experiencing university graduate unemployment.

Imbalance between branches

The imbalance between the production of graduates by universities, and the needs of traditional job markets, was aggravated by the rigidity of universities regarding the distribution of their enrolment across the different disciplines.

In industrialized countries, an adjustment in the distribution of university enrolment periodically takes place. This adjustment results from self-regulation of the education supply, made necessary by fluctuations in job market demands for particular professsions. For example, the declining employment in Québec's educational system in the seventies, caused by a drop in the birth rate, was followed by a drop in applications for admission to faculties of education, without any measure having to be adopted along these lines. University candidates quite simply shifted their attention to branches viewed as more promising. As a result of this mechanism, the enrolment distribution by discipline in developed countries tends to keep up with changes in the employment market, even without systematic planning. Young people avoid branches with limited employment possibilities, in favour of those that offer such possibilities.

In Africa, because of the excessively close link between education and the civil service, and because of the commitment made by the public authorities to offer employment to all graduates from the secondary level and up, enrolment distribution does not follow the evolution of the job market; it has not changed, in fact, since 1960.

In that year, 60% of students were enrolled in the human sciences and the arts, and 40% in the exact sciences. Several years later, despite job market saturation and the absence of positions for graduates in the human sciences, the enrolment distribution by branch remained unchanged.

Table 4 shows the detailed distribution by major discipline of this enrolment, in certain French-speaking African countries in 1983. The only country where this distribution favours the pure sciences is Guinea, with 81% of its enrolment in these branches, including 54% in agriculture.[10] In the other countries, the majority of students were enrolled in the social sciences. In many countries, more than 70% of students were enrolled in the human sciences, and in the Congo this figure was no less than 84%.

Attempts have been made in some countries to correct this situation. In Zaire, for example, a differential bursary rate was instituted in 1969, in order to encourage enrolment in scientific fields; students in these fields were entitled to a full bursary, whereas the financial assistance given to their colleagues in the human sciences represented only two thirds of the full bursary. However, such measures did not make it possible to modify the enrolment distribution across branches to a significant extent, in part because of the negative assessment by secondary graduates of their chances of succeeding in scientific fields. Such perceptions are perpetuated by the universities themselves: whereas, in general, less than 30% of students admitted to university 'succeed' in the first year, this success rate is even lower in the scientific fields.[11]

The consequence of this situation is that, despite the surplus number of post-secondary graduates with respect to demand, African countries still have acute shortages of cadres in certain employment sectors.

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[10] However, it seems that the training dispensed in these branches is of very dubious quality, to the point that graduates of certain schools have to receive additional training, in order to be able to work at a level corresponding to their degrees.

[11] We have argued in another study (Diambomba 1988) that the high failure rate is deliberate, as a technique used to maintain a relatively good fit between the graduate supply and demand on the labour market. According to this hypothesis, admission to the first year of higher education is granted to all those who complete their secondary schooling successfully, in order to meet the social demand for education. At the same time, the failure rate is maintained at a very high level, especially during the early years, in order to avoid awarding too many degrees. If this is the case, we have to question all the hypotheses that treat waste within higher education as a cost, especially if the postulate of a correspondence between the academic structure and the employment structure includes the principle that those who withdraw ('drop out') should find jobs corresponding to their level of studies.

Table 4: Percentage distribution of 1983 higher education enrolment by discipline

	Education	Social sciences	Commerce & adminis.	Natural sciences	Medicine	Maths.	Agric.
Benin	14	47	12	5	8	8	5
Burkina Faso	-	67	5	5	5	5	12
Burundi	11	39	19	5	8	11	5
Cameroon	14	69	-	13	3	8	-
Côte-d'Ivoire	18	49	4	6	7	13	2
Congo	14	69	-	10	5	-	1
Guinea	7	-	12	13	5	9	59
Mali	32	21	18	-	6	12	10
Rwanda	9	47	-	9	15	11	10
Senegal	4	54	2	14	20	3	3
Togo	33	35	-	14	8	6	4

Source : Statistical appendix to the sectoral study on education, Education and Training, The World Bank, October 1986.

Schooling without training

These imbalances have been aggravated by the relatively poor correspondence between training as received and the real requirements of the labour market. In fact, the excessively close link between universities and the civil service has incited training institutions to attach greater importance to schooling than to training. In this system, the ultimate goal pursued is the acquisition of the diploma needed for entry into the labour market, rather than the acquisition of knowledge. Consequently, students do not acquire the training required to work either in the modern sector or outside that sector.

Since the modern sectors of employment are saturated, African countries are trying to solve the problem of graduate unemployment by adopting a new strategy in their respect. Instead of offering them employment, it is expected that they will create jobs by becoming entrepreneurs.

However, this type of strategy cannot succeed, because the attitudes acquired in the educational system are contrary to such initiatives. Students admitted into universities are informed by the educational system, as soon as they arrive, that they are future political or administrative leaders. These aspirations are reinforced by the fact that their elders, who are their only role models, have made or are making their fortune in such positions. Moreover, many degree holders are unemployed not because there are no employment opportunities, but because they are waiting for the perfect job.

As a rule, the perfect job is set at a very high level. In a survey of Senegalese secondary school students, D'Hondt et al. (1981) found that the jobs to which these students aspire go all the way up to head of state. We also found a very high level of professional aspirations among inhabitants of Togo trained abroad (Diambomba 1988). The majority of these cadres aspired to senior managerial positions.

Consequently, in an educational system tied strongly to the modern sector labour market, degree holders are unemployed in large part because their objectives are limited to the acquisition of keys that will open the door to the jobs they idealize, namely those of the state bureaucracy. Since their aspirations are fixed on such employment, they do not use their creative faculties to seek out new situations.

Moreover, because of the lack of scientific equipment necessary for experimentation, practical knowledge, , the knowledge acquired by confronting theory with the requirements of the real world, is not learned. Young people leave higher education with general and vague knowledge, and without the skills that are so indispensable in the real world.

Studies of the professional integration of young graduates bear out this statement. For example, Ravel (1983) quotes a Madagascan official who has rather harsh words for the training received by young Madagascans abroad, because they return without having acquired the know-how they need to be immediately usable in the labour force. Not only do they learn a Western technology that does not correspond to what they find back home, but in addition, they have to be trained for another six months in the productive sector before they become operational. A similar observation is found in a survey carried out in Togo (Diambomba 1988).

These assessments apply to training received abroad, but as we have seen in the first part of this paper, African institutions of higher education are extensions of those of the old parent states. As has been suggested by Mazrui (1975), there is therefore no reason why training received in national institutions should differ from that received in related institutions abroad. The acquired level of technical competence may vary, but students are exposed to the same type of ideological conditioning.

In conclusion, African universities have not fulfilled their cadre training mandate in a satisfactory manner. In any event, one can reasonably ask, as many observers already have,[12] whether universities are the best institutions in which to acquire professional skills. They cannot really play this role, unless their faculties are sufficiently numerous and equipped with the necessary qualifications.

(b) Insufficient capacity for training trainers and continuing dependence on industrialized countries

The second function of universities is to train their own teachers and managers. However, the paradox is that, despite the overall surplus production of cadres in French-speaking Africa with respect to labour market demand, the universities themselves are suffering from a shortage of qualified teachers.[13]

This problem arises even at the secondary level. According to some estimates, secondary education teaching staffs comprised, on average, 35% expatriates towards the end of the seventies. The proportion of expatriate teachers was and remains relatively large, especially in the pure sciences. But the shortage of qualified national teachers is most acute at the university level.

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[12] Some go so far as to say that the educational system as a whole plays only the role of ideological conditioning (Bowles and Gintis, 1976), and that professional competence can really be acquired only in a working situation.

[13] The type of qualifications needed to teach at the university level is a tabu subject. In a system as highly elitist as the French one, these qualifications are not necessarily determined by technical competence, but rather by membership in the guild of teachers with professorial rank.

Substantial efforts have been made in most African countries to train teachers. For example, *Table 5* shows that the number of foreign teachers at the University of Abidjan has declined considerably at all academic levels. One notes a significant increase in the number of Côte-d'Ivoire nationals having attained the rank of professor or senior lecturer in the faculties of science and of medicine. Despite this effort, the number of teachers qualified to take responsibility for students at the post-university level is still very limited.[14]

Curiously enough, the number of teachers with high rank is greatest in medicine and in the sciences.[15] The fact that there are fewer professors and senior lecturers in the social science faculties is probably due to the corresponding qualifications being in greater demand outside the educational system, especially in the civil service, para-governmental organizations and political posts, these professional career paths often being more profitable, both in financial terms and in terms of prestige.

The effort to train higher level teachers was less sustained in most of the other countries. This is particularly true of those countries where the universities were created recently. In Togo, for example (see *Table 6*), there are virtually no teachers at the professor and senior lecturer levels.

Given the limited number of local teachers both in Togo and in Côte-d'Ivoire, higher education depends to a great extent on visiting teachers, both for teaching as such and for validation of teaching programmes. In the absence of such visitors, programmes are sometimes validated by professors abroad. This is the case at the National Institute for Education Sciences of the University of Benin, whose programmes are sent every year to a group of professors in France for validation.[16]

One can get a sense of the significance of expatriate personnel by examining the data on Mali. These show (see *Table 7*) that, despite the stress on self-sufficiency that one finds in virtually all documents about the development of education in Mali since 1962, almost half the higher level

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[14] According to the requirements of the French system, which most French-speaking countries have adopted, only those teachers with the rank of senior lecturer or higher can take on responsibility for such students.

[15] What is surprising about these data is that the increase in the number of national teachers having attained this rank is greater in the exact sciences than in the social sciences. One would expect the opposite, since, as we have pointed out, the social and human sciences are the most popular disciplines in Africa. In the absence of more precise information, one can only suppose that this trend results from a special training effort in the exact sciences.

[16] Apparently, the purpose of this validation is to ensure equivalence of locally awarded degrees with those awarded in France, in order to facilitate admission of Togo students to French institutions.

Table 5: Composition by academic rank of the University of Abidjan teaching staff in 1983-84

Rank	Professor		Senior Lecturer		Lecturer		Assistant Lecturer		Assistant	
Faculty	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Law	0	4	3	0	6	0	15	0	45	7
Economics	0	2	5	1	7	3	9	1	50	9
Medicine	16	13	20	5	6	4	-	-	100	9
Sciences	18	5	17	2	43	15	-	-	51	17
Humanities	3	3	2	1	44	7	-	-	20	8

Note: (1) = Côte-d'Ivoire nationals; (2) = Foreigners

Source : Yearbook, Administration, University of Abidjan, 1983-84.

Table 6: Composition by academic rank of the University of Bénin teaching staff in 1985-86

Rank	Professor		Senior Lecturer		Lecturer		Assistant Lecturer		Assistant	
Faculty	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Humanities	0	0	0	4	13	4	2	0	45	1
Sciences	3	1	1	2	10	11	1	1	16	10
Law	1	0	0	0	5	5	0	0	13	4
ESTEG	0	0	2	0	1	0	0	0	15	4
Medecine	8	1	10	1	15	2	0	0	9	2
Enginr.	0	1	0	0	0	0	1	0	3	8
Agronomy	0	0	0	0	10	0	0	0	11	2
Education	0	0	0	0	5	0	0	0	11	2

Note : (1) Togo nationals. (2) Foreigners.

Source : School statistics for 1985-86, DGPE, Ministry of national education and scientific research, Lomé, Togo.

Table 7: Evolution of the higher education teaching staff of Mali from 1974 to 1980

Year	No. of students	Mali prof.	Foreign prof.	% of foreign prof.
1974-75	2 445	174	153	47
1975-76	2 984	180	153	46
1976-77	3 556	188	182	49
1977-78	4 173	239	184	43
1978-79	4 756	285	184	39
1979-80	5 092	277	199	42

Source : Miala Diambomba, Problems hampering the development of research capacity in Mali and Senegal, in: S. Shaeffer and J. Nkinyangi, Educational Research Environments in the Developing Countries, IDRC, Ottawa, 1983.

teachers were expatriates in 1980.

Factors explaining the shortage of higher education teachers in French-speaking Africa

The slowness of French-speaking Africa to train higher level teachers is attributed to several factors, which we now discuss.

Inadequacy of the training capacity

The first factor, and perhaps the most important one, has to do with the inadequacy of the local training capacity. Few African universities have programmes at the doctorate level.

When such programmes do exist, they are organized jointly with foreign universities, and the students are usually supervised from abroad by professors located in those universities. At the beginning of the eighties, the only doctorate level training programme in existence in West Africa was one organized jointly by the University of Dakar and the University of Caen in France. Under this programme, students at the University of Dakar were enrolled at the University of Caen, usually taking their courses by correspondence.

In those disciplines for which such programmes are available locally, the students' rate of progress is extremely slow, because, among other reasons, the students are supervised by professors abroad. An example of this type of programme is the one introduced in the universities of Zaire starting in the sixties, and in Mali in the framework of the GRAEB[17] during the seventies. These are programmes under which students were enrolled in local faculties, but had to work on an independent basis, with participation in seminars organized during short visits by foreign professors, or study trips to foreign institutions, for the purpose of consulting the documentation needed to complete their research, as their only systematic training activities.

Heavy workload and earning additional income during thesis preparation

Apart from the communication problems inherent in supervision from afar, the slowness of the training process can be explained by the fact that most enrolled students already have a full-time position at their own university. As a rule, they are teachers who have been admitted to the rank of assistant by the educational system, and who are responsible for the greater part of actual teaching. The number of hours in their course load is generally greater than that of titled professors. In Togo, this load amounts to 8 hours for assistants and lecturers, but only 5 hours for senior lecturers and titled professors (Dougna 1988).

Consequently, unless they leave their institutional setting, these candidate professors become eternal assistants. Even when they do manage to complete their training without leaving the institutional setting, the overall training period can easily last more than ten years.

Since they have to keep living for the duration of their training, these teachers often hold down several jobs. They agree to work on a fee basis in other teaching institutions, or accept other types of jobs outside the education sector, going so far as to devote all their remaining working time, and even a significant proportion of their leisure time, to such activities. Under these circumstances, studying is relegated to last place in their scheduling priorities.

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[17] "Groupe de recherche action sur l'éducation de base" (Research Action Group for Basic Education). This group was created by officers from various departments of Mali's Ministry of Education, for the purpose of providing themselves with a doctoral studies programme that does not require leaving one's employment. Enrolling at the 'Centre pédagogique supérieur' (Advanced Pedagogy Centre) of the 'Ecole Normale Supérieure', these students study in an open university setting, but under the supervision of foreign professors.

Inadequacy of supervision and documentation

The organizational structure of training programmes, as inherited by African countries from France, also contributes to stretching out the duration of university teacher training in French-speaking Africa. Until recently, in fact, these programmes had no specific structure. Putting the stress on individual work and on a 'sponsor' system, which left virtually all decisions regarding the organization and duration of studies up to the thesis advisor and the student, they restricted the level of supervision down to a bare minimum. In some cases, once the research topic had been chosen, the candidate was left to his own devices, and the supervisor became involved again only at the time of submission of the work.

Beyond the uncertainties inherent in such a system, in that the work can be rejected by the thesis supervisor at the time of its submission, or at the time of its defence, this kind of study setting can only be effective if the students have access to the various resources they need to complete their work. This is not the case in Africa, where even the most basic documentation is generally missing from libraries. Local ministries conduct a considerable number of studies, but it is easier to find these studies abroad than in the local university library.

Bureaucratization of the teacher

Another reason has to do with the fact that teaching assistants are officers of the civil service, and are therefore subject, in most countries, to the same conditions of remuneration and the same administrative rules as bureaucrats.

As civil servants, teaching assistants are assured of stable employment. At the same time, the difference between their actual salaries and what they would receive as titled professors is relatively small. Some of them even manage to reach a higher level of income by doing outside work on a fee basis.

Moreover, even if they do not advance to the status of professor, the rules of the civil service give them the right to automatic indexed increases, based mainly on seniority. Given the job security they have as members of the civil service, and the flexibility of the system as to their time schedules, there is little incentive for them to accelerate their pace of studies.

Absence of research activity by local professors

Finally, the absence of research activity in African universities is yet another factor explaining the lack of progress in training higher education professors. After all, there can be no real training at the doctorate level unless students are in a position to acquire practical research experience under the supervision of their professors, but few teachers in French-speaking Africa are involved in research activity.

(c) The universities and research

If there is one area in which the contribution of universities to development in French-speaking Africa has been particularly weak, it is that of research and innovation. Apart from the transmission of knowledge, the most important traditional function of universities in the society is to push back the frontiers of knowledge. This role takes on an even more important dimension in Africa, where universities are defined as instruments of development, and where the knowledge to be expanded has no local foundations.

In order to serve as instruments of development promotion, universities should promote the enhancement of the indigenous scientific heritage, the creation of new forms of knowledge, and the adoption of knowledge already acquired, through integration with the African cultural environment. The enhancement of the indigenous scientific heritage is indispensable as a way of laying a foundation on which new technologies could rest. It is only by starting from such a foundation that the emergence of an artificial process can be avoided. For the fundamental problem confronting the development of scientific activity in Africa is, as Hountondji (1977) puts it, the extraversion of knowledge. Theory is elsewhere, he says:

> "Not here, not in Africa - at least no longer today, or not quite. That which is called modern science, and the technology it generates, is something that we have to take from the major centres of the industrialized countries."

The result is a state of dependence, in which what is to be studied and the methodology to be followed are determined by an external environment. Under these circumstances, a problem is perceived as real only on the basis of the values of that external environment. Conversely, something not perceived as problematic according to the local context, actually does become a problem once it is perceived as such according to the values of the external environment. We have already shown in another context that this brings about a state of artificial satisfaction (Diambomba 1974), which blocks any natural internal evolution.[18]

The immediate consequence of this situation is the loss of traditional science. For example, Africans, who had their own methods of ecological management (combatting erosion, rotation of cultivated land in the face of declining yield), are in the process of losing this knowledge even before they have mastered the so called modern methods coming from the external environment. This is why some agricultural specialists are starting to think of enhancement of traditional knowledge as a strategy to promote agricultural production (Wolf).

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[18] Needs created elsewhere are met within the very framework of the systems with which they were affiliated. Since everything is included, both problems and methods, the African researcher does not have to strain his mind to construct new theories. He nevertheless finds this arrangement satisfactory, because he earns recognition and all the related advantages.

Ancient and modern history gives abundant witness to the fact that no society has ever progressed by cutting itself off from its past. It is customary to refer to the absence of a research tradition as one of the reasons explaining the low priority given to research in African countries. But there is such a tradition. Knowledge accumulated in fields such as agriculture and traditional medicine are the fruit of a specific scientific approach.[19] What is missing is the integration of modern science and the modern scientific method with the indigenous context, and this is why modern science is not internalized. The quest for new knowledge amounts, in fact, to a rejection of previous practices. But it is known that the rejection of one situation and the adoption of new situations can give rise to a permanent process only if there is a good understanding of what is being rejected. Otherwise this leads to a juxtaposition, that is, the acceptance of new situations without abandonment of old practices.

It is therefore essential, for modern technological values to be integrated into the local context, to reinstate the value of the indigenous scientific heritage. Modern science will not be able to contribute to development in Africa until this integration has taken place.

The problem is that African universities do not play this role of putting value on the traditional scientific heritage. When they have participated in the process of creating new knowledge, it has been on the basis of the needs not of the local environment, but rather of the previous parent states. This is the only way in which one can possibly understand the installation of a nuclear reactor at Lovanium University in Kinshasa in 1958, long before nuclear science had been mastered locally.

All this shows that African universities should not be just producers of information; they must also be centres of popularization of scientific information, and they must bring about an awareness in the society of the importance of science and technology for development.

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[19] One can discuss the methodologies used to produce this knowledge, but such a debate cannot be anything but ideological. Conclusions drawn about the validity of knowledge are often determined by ideological considerations having nothing to do with the knowledge itself. For instance, acupuncture was recognized by Western medicine only recently. Similarly, it is known that modern pharmacology owes a significant part of its scientific heritage to knowledge about the use of plants accumulated in traditional worlds, and yet no credit is given to these worlds for this knowledge.

In theory, most African countries recognize the importance of research for their development. Numerous scientific research institutes, and even ministries of research, have been created in the majority of these countries since the sixties. In practice, however, research has been and continues to be in last place among the priorities of governments and universities.

Research is considered to be a subversive activity

The subversive character of research is often the first reason invoked to explain the low level of interest in research in Africa. Government officials are generally distrustful of anything that might contradict the foundation of their policies.

This is nowhere more evident that in education. It is often said that the ministry of education is built on a mine that could explode at any moment. In African countries, as in others, students enjoy a great deal of political power. Even and especially under single-party political regimes, student demands can lead to ministers falling. This makes the ministry of education one of the least stable political appointments. In some countries, such as Zaire, the career expectancy of an education minister is limited to several months. This explains the lack of enthusiasm about using objective data for the formulation of policies, because it can lead to losing one's job.

Moreover, nobody really wants to question policies if that is equivalent to "biting the hand that feeds one". For example, it is common knowledge in many African countries that educational reforms are undertaken mainly in reaction to subsidy or loan offers made by international organizations. The various projects sponsored by Unesco, and especially those of the World Bank, are striking examples of this. These projects often disappear almost as soon as the subsidy comes to an end.

Insufficiency of financial resources?

Given that there is not much interest in research, not much is devoted to it in the way of financial resources. Inadequate facilities and financial means is one of the reasons most frequently invoked to explain the absence of research activity in the universities of French-speaking Africa. Although some countries do provide research funds for university teachers, their use is limited to paying for study or documentation trips abroad, in particular for those who are in the process of writing a thesis.

The lack of funds is not enough to explain the absence of research activity in African universities (Diambomba 1983). There is much research that can be done with limited or even no financial means. This is true, for example, of analysis of the volume of data collected by planning offices in ministries of education. The fact that these data are not analyzed is due to the shortage of scientific staff, to the bureaucratization of the teaching function, and to the absence of clear policies governing scientific research.

Insufficient research staff and dispersion of energies

In French-speaking African universities, the professor is not always a practising researcher. He may have a sense of questioning and critical analysis, but the circumstances under which he works do not favour active research. In most cases, teachers have not yet completed their own training, and are doing research as part of their thesis preparation. In fact, the small number of research studies coming out of these universities are generally connected with theses. However, this production is limited, because the teaching load is relatively heavy, as we have seen above. They are also involved in other activities, especially outside contract work to increase their incomes. All in all, they have little time to do research.

Employment security in the civil service and automatic promotion

Moreover, as officers of the civil service, university teachers enjoy job stability, and their statutory promotion is not greatly influenced by their academic activities. There is academic evaluation by inter-state bodies such as the CAMES, but few candidates submit their cases for review, because they do not really have any interest in doing so. As a result of the security afforded by the status of civil servant, the small difference between the income of a professor and that of an assistant who manages to do a few contracts, and especially the system of automatic indexed promotions, teachers are not very motivated to use such channels as a path to promotion.

It is in fact a vicious circle; the inertia of teachers in the matter of research is explained in large part by the insufficient number of university teachers having the required qualifications; at the same time, those who want to acquire qualifications in this respect cannot do so, because they have too heavy a teaching load, or because they accept too much contract work to increase their incomes. Membership in the civil service and the resulting job security remove any incentive to seek promotion within the university. Since university research is done partly with a view to obtaining such promotion, it becomes a low priority. To look at it another way, since it is indispensable to obtain the title of professor, the number of professors is increasing slowly. Finally, those who succeed in obtaining the title are almost immediately snatched up elsewhere, and research activities by professors that would make it possible for assistants to acquire practical experience are almost non-existent.

Absence of clear policies governing research

The countries of French-speaking Africa do not have clear policies regarding scientific research. We have mentioned above that most of these countries created scientific research coordination or management structures in the seventies. However, in most cases it was more a question of reproducing situations observed elsewhere, especially in the previous parent states, than of really becoming aware of the importance of research for economic and social development.[20] Consequently these structures play no specific role, even though they have been given large staffs. They are just bureaucratic entities serving mainly to attenuate the problem of graduate unemployment.

In most of these countries there are few or no functional relations between the universities and the research coordination and management structures. The latter generally have no resources to distribute, and when they do, they guard them jealously and attract researchers to themselves, rather than funding research in its natural environment. Universities and scientific research management and coordination structures end up operating in parallel, as a rule. Even when a university teacher is associated with both entities, the tasks he accomplishes in the one and in the other are done in parallel. When these structures do play a role, it is generally limited to political and administrative control of research activities. In most of these countries, research topics must have political and administrative approval before the work is done, even if it is independently funded. In some countries even a master's dissertation has to be approved before it is defended, and it is within such structures that the approval process takes place.

Under these circumstances, university teachers tend, particularly if they are still assistants and therefore in a position of greater insecurity, to take refuge behind the fear of administrative or political reprisals, and to do little or no research, especially if the topics of interest to them are likely to contradict the current orientation of government policies.

Insecurity and dependence with respect to the outside world

The dependence of African universities on those in industrialized countries exacerbates the insecurity of African researchers. As Altbach puts it,

> "The hegemony of the world's research networks and of the main publishing houses, the use of the major parent state languages, the very wealth of the industrialized countries' university institutions and even their size have perpetuated their domination of the world of knowledge."

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[20] An examination of cabinet minister shuffles in African countries illustrates this fact. For example, the creation of new ministerial posts in France almost automatically leads to the introduction of similar posts in the countries of French-speaking Africa.

Research seems acceptable only when it is approved by the representatives of these networks. There is also a fear of publishing work that was not done in accordance with the paradigms accepted by these networks.

In French-speaking Africa, this fear is amplified by the structure of relations between professors and the other teachers, a structure inherited from European universities. These relations are governed by a mandarin type system, which imposes a hierarchy on knowledge in accordance with the academic status of the individuals involved. It is the titled professor who has the knowledge. The other teachers or researchers, who are often his assistants, have to have their knowledge validated by him.

This patronage system takes on an even more significant dimension in the African case, since relations between African universities and those of industrialized countries are already hierarchical. As the West is considered to be the cradle of science, the African researcher must not only have his 'knowledge' accepted by the master in the traditional European sense, but must also have himself accepted by his master's general background of origin. Thus the fear that research work will not be accepted by those who have to validate it constitutes yet another obstacle to the development of research activities in African universities.

Marginalization of the university

Finally, the development of research is hampered by the marginalization of the university in African countries. While the resources invested in universities are justified by the important role they are meant to play in the conception and monitoring of development activities, African universities are in fact kept at a distance from debates on development policies. When African officials need information for the formulation of policies, they prefer to seek it from international agencies. These agencies, in turn, entrust their contracts to foreign consultant's offices or universities, making it clear that it is preferable to deal with institutions or individuals from whom one is sure to obtain results. Whether or not this attitude is well founded, the marginalization of African universities deprives them of important resources.

III. Conclusions: challenges for planning

The doubts raised about the impact of African universities on economic and social development, and more specifically, the suggestions made by the World Bank to transfer part of the resources invested in universities down to the primary level, have revived the debate about higher education in Africa.

This debate has stimulated African countries to re-assess the role of universities in their development. Meeting in Harare in 1982, African ministers decided to give their universities a 'new' mandate. This mandate is to orient educational policies and to produce the analyses that are necessary for a better understanding of the pressing problems confronting African societies, in order to find remedies to them, as well as to improve the actual functioning of teaching and training activities at all levels.

Among the problems crying out for urgent solution, there is the progressive distancing of the school from the society for which it is supposed to train cadres. This distancing has contributed greatly to graduate unemployment, because there is no fit between what young people learn at school and the environment in which they are called upon to work. Universities will have to conduct studies of this type of problem, with a view to improving the learning process and to making training more compatible with the needs of local socio-cultural environments.

This new role was made explicit in the following terms in the Harare declaration:

> "Higher education in general has a role of the highest importance to play in the development of African States, and especially the university, which is an irreplaceable research and training structure in all fields. The university is in fact an integral part of the national education system, and as such, it cannot remain indifferent to any education related issue, whatever the level affected by that issue. Training appropriate and highly qualified manpower, and increasing the level of scientific and technical knowledge are objectives to be met mainly by the university."

In order to take on this role, African universities have to transform themselves. In their present form, they are too dependent on external contexts of which they are extensions. As has been pointed out by many observers (Mazrui 1975, Altbach 1982), this dependence places them "at the periphery of an international system of knowledge dominated by the major industrialized nations."

They should start by specifying their objectives. It could be argued, in fact, that they did not fulfill their mandate in the past precisely because there was no consistency between their programmes and their objectives. Given that African universities are meant to train cadres, it is not appropriate for them to model their structures and their programmes on those of industrialized countries, where the main function of universities is to train thinkers. The result is that they train neither thinkers nor cadres effectively. Not being very well suited to provide professional training, they should limit themselves to general training, that is, to the training of the researchers so urgently needed by African countries, if they are to master science and technology. Professional training should be left to specialized schools and to enterprises, which can do the job more effectively.

However, in order to fulfill this new role, it is necessary that they stop operating as appendages of public administrations. It is necessary that they be autonomous with respect to administrations, in order to free themselves from political and bureaucratic constraints, which stifle research and the critical spirit; only in the presence of full autonomy and freedom can teaching and research flourish (Altbach 1982).

Consequences for university cooperation in the region and abroad

Given the extremely high costs involved in improving the research quality and capacity of universities, African countries will have to review their higher education development strategies. Instead of continuing to invest in the creation and operation of micro-universities, these countries would do better to unite their efforts and to promote the establishment of regional institutions. Their complementarity in terms of human resources should make it possible for them to move towards self-sufficiency in the area of training. This type of cooperation is already among the principles set forth by African leaders, during the conference of education ministers at Harare.

Since universities mushroomed mainly to meet political requirements, it may not be possible to reverse the trend. Nevertheless, efforts to organize and execute the most costly programmes could be combined; for example, regional centres for training higher level researchers and teachers could be created.

However, the adoption of such a strategy requires fundamental reform of the way higher education functions. The essential condition is that teachers stop being members of the civil service. Dissociating universities from public administrations would make it possible to establish operating rules more consistent with the academic function. It would infuse universities with a competitive spirit. From another point of view, doing away with the security inherent in a bureaucratic career would create a dynamic vigour that would stimulate creativity.

However, such reforms require a revision of the system of funding higher education, which should mobilize additional resources and become more entrepreneurial. The move towards cost privatization should be accentuated, and universities should finance a much greater share of their current expenses from tuition fees. These should be set in such a way as to reflect real costs as faithfully as possible.

The objections generally raised against privatization are based on the hypothesis that it leads to inequalities. But the present system of free education is not equitable either. On the one hand, access to institutions of learning is often determined by considerations of influence. On the other hand, less advantaged groups still pay a lot for access to education through taxation, while benefiting less from the system than the well-off groups. The equity problem could be attenuated by the establishment of a system of loans and bursaries. Under such a system, students with an advantaged background, who have better opportunities for access to the best paid jobs in any event, would only be given loans, and bursaries would be reserved for those coming from a less wealthy environment.

This system of loans and bursaries could be financed by setting up a fund consisting of education tax payments, with modern sector enterprises, which benefit most from the training of senior cadres, as the main contributors.

The recovery of loans is considered to be a major problem with the implementation of such a system (Psacharopoulos and Woodhall 1985). Even finding previous students after they have left the school system can be difficult, and it is not always obvious that they are prepared to repay their loan. Nevertheless, employers could play an important role in the recovery of student loans. They could be charged with deducting periodic reimbursements at the source, as is already done for taxes, trade union dues and other contributions.[21]

Reforming the financing of education should provide universities with more available resources than is presently the case. Rather than transfering resources collected through privatization of costs to the primary level, as envisaged by the strategies that have been proposed recently (World Bank 1988), these resources should be re-injected right into higher education itself.

As for the problem of funding primary education, it would be resolved by transfering responsibility for primary schools to local communities, which already shoulder a significant proportion of expenditure at this level.

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[21] In fact, even when there was still a pretence of free primary education, access to such schools was always subject to unofficial payment for vacancies. The insufficient number of vacancies in these institutions made it possible for certain officials, at different levels of the school system, to demand private payment as compensation for their 'assistance' in obtaining a place. Once accepted into the school, the pupil is often obligated to make various payments, or to do work in fields that have nothing to do with the school. It is difficult to estimate such costs, because of the very understandable fear of parents, who are reluctant to divulge any information about them. Nevertheless, there is reason to believe that these costs are very high, and that they are most onerous for less advantaged groups, whose members do not know influential individuals.

The international community's contribution

The industrialized countries can play an important role in the improvement of French-speaking Africa's training and research capacity, provided certain conditions are fulfilled.

The first of these conditions is that the African countries clearly define their objectives, and that they provide themselves with their own identity. Definition of objectives will make it possible better to specify areas of cooperation and better to identify partners for cooperation. By providing themselves with their own identity, African universities would contribute to stripping away the hierarchy in their relations with their potential partners; it would also make it possible for them to take into consideration the environment they are supposed to serve.

In addition, it is necessary to change the concept of cooperation, which is often identified at present with technical assistance, implying a hierarchical relationship: the stronger helping the weaker. The process essentially amounts to an ephemeral intervention, often coming to an end even before the defined objectives are achieved, because it is dependent on political or ideological considerations. When the cooperation partner defines himself as a technical assistant, he behaves like a representative of a superior science and culture.

Cooperation is different, for it involves a relationship between partners. As such, it cannot be an ephemeral relationship, because the quest for knowledge is a permanent process. The cooperation partner then becomes a representative of science, in the broadest sense of the term, who has 'an awareness of his own ignorance', and who recognizes that he has as much to give as to receive in his new environment.

Challenges for planning

The issue of higher education in African countries constitutes a challenge for planning. A strategy should be worked out to promote its development, and to improve its ability better to fulfill its main role, which is to create knowledge and to achieve scientific progress.

Under this strategy, education should stop being just a producer of bureaucratic managers; instead, it should promote the development of intellectual curiosity, which is the fundamental factor in the acquisition of an analytic ability. Such curiosity and this analytic ability are indispensable for the formulation of dynamic policies, that lead to genuine change, rather than to routine management or crisis management, to use the expression that has been very current for some time.

The experience of the last thirty years in the area of planning has shown, in fact, that development is not a mechanical process. Consequently, the enhancement of human resources cannot be a simple question of figures. The role of planning units must not be limited solely to compiling data or programming enrolment in an arbitrary manner; such units should become fora for discussion and reflection about choices of action.

This means that the right conditions must be created to mobilize resources that will make it possible for planning units to play this new role. The task is a difficult one, at a time when resources are scarce, at a time when tradition exerts a greater influence on decisions than does actual reality.

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Education, work and employment: present issues and future challenges in developed countries

Henry M. Levin and Russell W. Rumberger[1]

Introduction

Virtually all of the advanced industrialized countries are in the process of examining their educational systems to see if they will meet the challenges of the coming decades. In many cases there is at least a hint of alarm because of future economic uncertainties caused by such changes as a fully integrated European Community and the rapid rise in economic power of such newly industrialized entities as Brazil, South Korea, Taiwan, Singapore, and Hong Kong. In many markets for sophisticated technological products, Japan has replaced the United States and Western Europe as leading producers, and emerging economic powers like Korea and Brazil show every indication of undermining even Japan. At the same time, North American and Western European nations have every intention of winning back markets to maintain traditionally high standards of employment and income.

In almost every case, education is considered to be a key to maintaining or regaining economic progress and competitiveness. The developed countries cannot compete with the developing ones on the basis of wages without creating drastic reductions in income and working conditions. Therefore, it is argued, they must aim for much higher worker productivity that will merit higher wages while ensuring competitive prices and products. Such a strategy assumes a need for greater technological investment, streamlined organizational structures, and a focus on products which require a flexible and highly-trained workforce. A crucial part of this strategy is the formation of a supportive educational strategy both in the formal educational system and in job training by enterprises.

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Of particular concern is the view that education must adapt to the use of new technologies. With the advent of technologies based upon microprocessors, new communications technologies, robotics, and biotechnology, it is argued that the labour force must adapt to new workplace demands. All of these technologies make possible the emergence of new products and expansion of new occupations, while creating changes in work tasks in many of the more traditional occupations. Some features of the new technologies are so automated that it is possible to shift such production techniques easily to less-educated workforces in industrializing countries where lower wages and less demanding working conditions prevail. Indeed, the multinational enterprises of the industrialized societies are constantly choosing between industrialized and industrializing nations in terms of where to make productive investments. And, such enterprises continually weigh whether the education of their labour forces in the industrialized nations justifies the higher wages received by their workers.

The purpose of this paper is to consider some major issues that the industrialized countries face in terms of educational planning and decision-making in a world of economic uncertainty and technical change. Most of the specific analysis will refer to the situation of the United States, but many of the concerns apply more generally to all of the developed countries. In order to place our analysis in context, we will present some basic data on educational and occupational distributions of the major industrialized countries with attention to employment and wage issues. This information will provide a foundation for the ensuing discussion and analysis. The second part of the paper will address issues that arise on the demand-side of labour markets that must be considered in educational planning. The third section will discuss the determinants of the supply of educated labour, and the fourth section will deal with some educational consequences of the previous analysis. The final section will suggest some potential directions for educational planning and policy among the developed countries.

International comparisons

Although we speak of the industrialized countries as if they were homogeneous, they are anything but monolithic. Since we will provide some detail on the situation of the United States, it is important to place the U.S. experience in the overall context of the industrialized world. The U.S. is similar to other industrialized countries in many respects, yet important differences exist as well. This section briefly describes those similarities and differences.

Employment and unemployment

One important difference among industrialized countries concerns the creation of jobs. Since 1970, the U.S., along with Canada and Australia, has produced new jobs at 2 to 3 times the average rate for all industrialized countries (*Table 1*). During the 1970s, for example, the U.S. created 20 million new jobs, a 26 per cent increase from 1970 compared to an average increase of 11 per cent for all industrialized countries. Similarly, in the 1980s, the U.S. has added 13 million new jobs, a 13 per cent increase from 1980 compared to 6 per cent for all industrialized countries.

These figures on employment levels refer to official government estimates based on national employment surveys of individuals and business establishments. They tend to exclude individuals who operate in what has been called the 'underground economy:' *sub-rosa* employment agreements that avoid tax and social security payments or more permanent labour contracts, illegal activities (drug and arms trafficking), bartering, and other activities that are not systematically monitored by government agencies (Feige 1988, Tanzi 1982). In general, countries that impose rigid conditions on employment contracts with respect to changes or termination will have a larger number of persons in unconventional employment relationships including 'underground' arrangements which are not included in the data. The result is that differences in underground activity among nations can bias comparisons of employment growth rates.

Unemployment rates also differ markedly among the industrialized countries. In 1970, the unemployment rate in the U.S. was much higher than in other industrialized countries — 4.9 per cent compared to an average rate of 2.6 per cent for all industrialized countries as shown in *Table 2*. Since 1970, the average unemployment rate for all industrialized countries has increased, reaching 5.2 per cent in 1980 and 7.4 per cent in 1987. But an important shift has taken place between the United States and other industrialized countries, especially those in Europe. Unemployment rates in the largest European industrialized countries — France, Federal Republic of Germany, Italy, and the United Kingdom — have surged dramatically in the 1980s. In contrast, the U.S. rate of unemployment has fallen below the average rate for all industrialized countries, although it remains substantially higher than those in Japan and Sweden, countries that have historically had low rates.

Types of jobs

All industrialized countries have experienced similar shifts in the types of jobs produced in their economies. One major shift has been the growth of jobs in the services and a decline in jobs in manufacturing.

Table 1: Employment rates for selected industrialized countries: 1970, 1980, 1987 (numbers in thousands)

	1970	1980	1987	Change 1970-80		Change 1980-87	
				Number	Percent	Number	Percent
Australia	5 388	6 284	7 177	896	16.6	893	14.2
Canada	7 919	10 708	11 955	2 789	35.2	1 247	11.6
Japan	50 140	54 600	58 320	4 460	8.9	3 720	6.8
France	20 343	21 330	20 970	987	4.9	(360)	-1.7
Fed. Rep. of Germany	26 169	25 750	25 370	(419)	-1.6	(380)	-1.5
Italy	19 083	20 200	20 590	1 117	5.9	390	1.9
Netherlands	4 601	4 980	5 240	379	8.2	260	5.2
Sweden	3 836	4 174	4 396	338	8.8	222	5.3
United Kingdom	24 381	24 670	24 910	289	1.2	240	1.0
United States	78 678	99 303	112 440	20 625	26.2	13 137	13.2
Mean					11.4		5.6

Sources: U.S. Bureau of Labor Statistics, Handbook of Labor Statistics, Bulletin 2217 (Washington, D.C., U.S. Government Printing Office, June 1985), Table 126; U.S. Bureau of Labor Statistics, "Current Labor Force Statistics", Monthly Labor Review, July 1988, Table 46.

Table 2: Unemployment rates for selected industrialized countries: 1970, 1980, 1987 (in percentages)

	1970	1980	1987
Australia	1.6	6.1	8.1
Canada	5.7	7.5	8.9
Japan	1.2	2.0	2.9
France	2.4	6.4	11.1
Fed. Rep. of Germany	0.5	2.9	6.9
Italy	2.8	4.4	7.9
Netherlands		6.2	9.3
Sweden	1.5	2.0	1.9
United Kingdom	3.1	7.0	10.3
United States	4.9	7.1	6.2
Mean	2.6	5.2	7.4

Sources : U.S. Bureau of Labor Statistics, Handbook of Labor Statistics, Bulletin 2217 (Washington, D.C.: U.S. Government Printing Office, June 1985), Table 126; U.S. Bureau of Labor Statistics, "Current Labor Force Statistics", Monthly Labor Review, July 1988, Table 46.

Manufacturing employment declined by an average of 3 per cent among the major industrialized countries in the 1970s (*Table 3*). The U.S., Canada, and Italy actually increased manufacturing employment during this period, while all remaining countries experienced declines. This trend has continued during the 1980s, with all industrialized countries except Japan showing continuing declines in manufacturing employment.

In contrast, employment in the services sector, which includes retail and wholesale trade, financial services, government, health, and business services, has surged. Services employment among the major industrialized countries increased by an average of 25 per cent in the 1970s and by an average of 10 per cent in the 1980s as shown in *Table 3*. Since the types of jobs found in the services sector generally differ from the types of jobs found in the manufacturing sector, employment shifts among industrial sectors have important implications for education and training policies, as the discussion below will point out.

But what is happening to the quality of jobs that are being created in the industrialized nations? Are the new jobs similar in wages and skill requirements to existing jobs in these economies? The U.S. case, which has generated intense debate, will be discussed in some detail below. The limited availability of comparable data make it difficult to draw any firm conclusions about differences among industrialized countries in the quality

Table 3: Employment by Sectors for Selected Industrialized Countries: 1970, 1980, 1985 (numbers in thousands)

	1970	1980	1985	Change 1970-80		Change 1980-85	
				Number	Percent	Number	Percent
Manufacturing							
Australia	1 340	1 242	1 109	(98)	-7.3	(133)	-10.7
Canada	1 768	2 111	1 981	343	19.4	(130)	-6.2
Japan	13 750	13 630	14 530	(120)	-0.9	900	6.6
France	5 661	5 445	4 992	-216	-3.8	(453)	-8.3
German Fed. Rep.	9 779	8 849	8 009	(930)	-9.5	(840)	-9.5
Italy	5 293	5 485	4 766	192	3.6	(719)	-13.1
Netherlands	1 241	997	990	(244)	-19.7	(7)	-0.7
Sweden	1 064	1 025	968	(39)	-3.7	(57)	-5.6
United Kingdom	8 465	6 929	5 728	(1 536)	-18.1	(1 201)	-17.3
United States	20 746	21 942	20 879	1 196	5.8	(1 063)	-4.8
Mean					-3.4		-7.0
Services							
Australia	3 070	4 032	4 413	962	31.3	381	9.4
Canada	4 955	7 194	7 839	2 239	45.2	645	9.0
Japan	23 770	29 910	32 500	6 140	25.8	2 590	8.7
France	9 605	11 874	12 372	2 269	23.6	498	4.2
German Fed. Rep.	11 442	13 189	13 358	1 747	15.3	169	1.3
Italy	7 656	9 715	11 315	2 059	26.9	1 600	16.5
Netherlands	2 522	2 961	3 420	439	17.4	459	15.5
Sweden	2 066	2 650	2 806	584	28.3	156	5.9
United Kingdom	13 071	14 760	18 364	1 689	12.9	3 604	24.4
United States	49 031	66 638	73 521	17 607	35.9	6 883	10.3
Mean					26.3		10.5

Sources: U.S. Bureau of Labor Statistics, Handbook of Labor Statistics, Bulletin 2217 (Washington, D.C., U.S. Government Printing Office, June 1985), Table 126; International Labour Office, 1986 Yearbook of Labour Statistics (Geneva, International Labour Office, 1986), Table 3B.

of jobs being created. In general, Western European nations have not increased employment as rapidly as the U.S., but earnings levels have been maintained relative to the U.S. where rapid job growth has been associated with an absolute decline in average real wages (Freeman 1988) and a proliferation of low wage jobs (Bluestone and Harrison 1988). Recent figures on part-time employment suggest similar trends among industrialized countries: there has been some increase in the proportion of part-time workers, while the proportion of involuntary part-time workers appears to have declined in recent years (Ginneken 1986; Moy 1988). Yet for the U.S. at least, involuntary part-time employment has grown much faster than full-time employment over the period from 1979 to 1987 (Levitan and Conway 1988, Table 2).

One should be cautious in drawing straightforward inferences from these comparisons. Some have argued that the U.S. explosion in employment is attributable to its flexible labour markets with few encumbrances on the conditions and duration of employment contracts (Coe 1985). In support of this interpretation is the fact that real wages have fallen relative to those in Western Europe and Japan. But, it is clear that the U.S. expansion in employment has also been fueled by record deficits in the federal budget and in the balance-of-payments, factors that are unrelated to labour market flexibility and that may have particularly pernicious long-term consequences.

Even though employment as a percentage of population and hours of work increased in the U.S. at a faster rate than in Western Europe, the annual increase in gross domestic product was about the same. This means that Americans had to increase employment more to gain only the same increase in living standards of their European counterparts, and many of the new U.S. workers were additional family members who were induced to enter the labour market to augment the low incomes of heads of household. Finally, the enormous expansion of employment in the U.S. has been accompanied by greater inequality in family income even after adjusting for changes in demographic factors such as smaller family size and the growth of households headed by women (U.S. Congressional Budget Office 1988; Thurow 1987). Thus, one must be cautious in inferring the causes of rapid employment expansion in the U.S. and in assuming that such expansion had only positive consequences and was the result of labour market flexibility.

Labour supply

Of course, both levels of employment and unemployment depend upon the supply of labour as well as demand. Issues of labour supply concern the quantity and quality of the labour force seeking employment.

Here again there are important similarities and differences among advanced industrialized countries.

The number of persons in the labour force is a function of the working-age population and labour force participation rates. Among industrialized countries, population growth rates have been quite variable, with the U.S., Canada, and Australia having much higher population growth rates than Japan and the industrialized nations of Europe. For example, the population 18 to 64 years of age increased by 14 per cent between 1975 and 1985 in the U.S., 18 per cent in Canada, 9 percent in the Federal Republic of Germany, and 5 per cent in the U.K. (Ginneken 1986, Table 2). Trends in labour force participation rates have been similar among industrialized countries: participation rates have generally declined for males and increased for females, although substantial differences remain in female participation rates. Of particular importance in increasing the labour supply in the U.S. are the high levels of immigration from Asia and Latin America.

Table 4: Education levels of the labour force for selected industrialized countries: selected years (percent distribution)

	Year	None	Primary		Secondary		Higher
			(a)	(b)	(a)	(b)	
Canada	1969	0.0	6.2	34.3	20.3	30.4	8.8
	1981	0.0	3.1	10.2	26.9	23.9	35.9
France	1982	0.4	38.6	24.8	18.2	9.6	8.4
Fed. Rep. of Germany	1982	0.7	0.0	12.5	53.9	19.4	13.5
Japan	1969	0.0	3.9	66.5	12.4	10.6	6.6
	1979	0.0	0.0	39.3	20.3	22.4	18.0
Netherlands	1967	0.0	2.9	54.1	8.8	2.2	11.0
	1975	0.0	1.7	31.3	44.9	11.2	10.9
United States	1969	0.0	12.3	23.3	10.1	35.1	19.2
	1981	0.0	2.1	7.8	18.8	35.8	35.6

(a) Incomplete
(b) Complete

Source : George Psacharopoulos and Ann Maria Arriagada, "The Educational Composition of the Labour Force," *International Labour Review*, vol. 125, no. 5 (September-October 1986), Tables 1 and 2.

The education levels of workers vary considerably among industrialized countries. In the U.S. and Canada, more than one-third of all persons in the labour force have completed at least one year of post-secondary education as shown in *Table 4*. In other countries, the percentages are much lower: France, 8 per cent; Federal Republic of Germany, 14 per cent; and Japan, 18 per cent. In contrast, a much larger percentage of labour force participants have completed only primary schooling in France and Japan than in the U.S., Canada, or the Federal Republic of Germany. Yet in virtually all industrialized countries, enrolments in post-secondary education continue to expand, which will lead to further increases in the education levels of workers.

Demand for educated workers

It is widely viewed that the demand for educated workers is rising and will continue to rise in all of the industrialized societies. This view is usually premised on the dramatic shift from manufacturing to services that has characterized the industrialized economies as well as the increasing reliance on such technologies as micro-processors, robots, bio-technology, and new communications technologies. In this section, we will discuss the demand for educated workers by focussing on some of its major determinants.

The changes in demand for educated labour depend upon changes in the level and composition of demand for goods and services, changes in the relative cost of educated labour, and changes in technology and organization that affect the relative productivity of educated labour in comparison with less-educated labour and/or capital (Welch 1970).

Demand for goods and services

The production of some goods and services requires more educated labour than the production of others. As the demand for goods and services moves from traditional agricultural commodities and mass manufactured products towards the services and sophisticated and customized products, there will be a higher demand for educated labour, and particularly labour with university training. At the extreme, research and development and professional services require workers with substantial education, usually post-graduate training. At the opposite extreme, traditional agricultural and low-level manufacturing require largely unskilled labour. In general, the demand for goods and services has become more education-intensive in terms of production inputs, although there has also been an expansion of low-level service occupations such as waiters and shop clerks, a matter that we will discuss below.

A related issue is that of the competitive position of a country in world trade and its sales and purchases in international markets. Some of the demand for a country's goods and services will be satisfied through imports. The question of the level and composition of imports and exports depends crucially on their prices relative to those of similar goods that are domestically produced. Since prices in international trade depend upon both national productivity and exchange rates, both can influence the patterns of trade with respect to overall levels and the education-intensiveness of their composition among different goods and services. In general, the exports of the industrialized countries tend to be more education-intensive than their imports. But, as technology in micro-electronics and related industries make it easier to employ less-educated workers, technology transfer enables an increasing shift of formerly education-intensive production to the less-developed countries. Such shifts are presently taking place. In general, new technologies are creating new international structures of production whose implications for the employment of educated workers cannot be fully forecast in a rapidly evolving situation (O'Connor 1987).

Cost of educated labour

A second influence on the demand for educated labour is its cost relative to that of other productive inputs such as other types of labour and capital. In the U.S. real labour costs have fallen over time, with greater declines among workers with less education than for those who were college or university graduates (Berlin and Sum 1988, p.9). There is no corresponding evidence of a decline in capital cost. Indeed, labour costs have not kept pace with rises in labour productivity, and labour compensation has fallen as a proportion of national income. The relative and absolute decline in real labour costs has induced employers to substitute labour for capital in production, partially explaining the rapid rise in employment.

Changes in productivity of educated labour

A third influence is the effect of changes in technology and organization of the workplace on the relative productivity of different types of labour. Although most discussions of the new technologies presume that their sophistication requires a demand for more education, this is only true if such technologies are embodied in forms of capital that are a *complement* to education. Surely, many applications of technology require workers who are better educated and trained. However, technology can also be used as a basis for capital investment that is a *substitute* for education. The sophistication of micro-processors can be used to reduce the educational requirements for jobs by substituting the measurement, manipulative, and analytical capacities of hardware and software for these qualities of humans. This issue will be addressed below.

A related development is the shift from traditional organizations with a detailed division of labour to one that has less hierarchy and more worker participation in decision-making in order to increase productivity. This type of shift tends to increase the skill and educational requirements of workers, even in the absence of technological change, but it has particularly important implications in conjunction with the application of new technologies (Levin 1987). The participative work organization is becoming more prominent in all of the industrialized countries in automobile and electronics manufacturing and in other products and services. Instead of just following a repetitive routine, workers are expected to make decisions about product quality, scheduling of production, training, and job rotation and to address problems that arise in production. Especially important is the ability to use information in an information-rich and computer-mediated environment to address production needs (Zuboff 1988). These tasks require basic skills in numeracy, literacy, and reasoning as well as the technical knowledge, communication skills, and problem-solving skills that are associated with relatively more education.

Projection of future jobs and educational needs

The factors discussed above — technology, international competitiveness, and work organization — all influence the kinds of jobs being produced in advanced economies and, therefore, have important implications for education and training. While it is impossible to predict precisely the extent of these changes and their specific impact on education and skill requirements of jobs, it is possible to examine past trends and current forecasts to get some idea of what future jobs may look like in the near term. We will examine these developments drawing on a variety of data and literature for the U.S.

For the aggregate economy, changes in the skill requirements of jobs stem from two factors: (1) changes in the composition of jobs in the economy, and (2) changes in the skill requirements of individual occupations. Changes in the composition of jobs in the economy — such as employment growth that favors high-skilled jobs over low-skilled jobs — can increase aggregate skill requirements in the economy even if the skill requirements of individual occupations do not change. Similarly, changes in the skill requirements of individual occupations — such as increased skill requirements stemming from the increased use of new technologies — can raise aggregate skill levels even if there are no changes in the composition of jobs in the economy. The issue of whether skill requirements of jobs is increasing or decreasing has generated a great deal of debate in the U.S. as in other industrialized countries. In the U.S. case, the debate has been fueled by conflicting empirical evidence. What does the evidence say?

Changes in the composition of employment

Most of the evidence on changes in the composition of jobs in the United States comes from official employment forecasts of the U.S. Bureau of Labor Statistics (BLS). Every two years, the BLS develops detailed projections of future economy activity, industrial growth, and employment within industries and occupations based on an elaborate econometric model (U.S. Bureau of Labor Statistics 1987). While such forecasts are always subject to some error, reviews of past forecasts show they are reasonably accurate in predicting overall trends and relative growth rates among major industries and job groups (Goldstein 1983; U.S. Government Accounting Office 1985; Fullerton 1988). The latest projections cover the period from 1986 to 2000. Thus they provide a glimpse of the future job market in the U.S. over the next decade or so.

Employment forecasts for the U.S. labour market have been used to argue that new jobs will require higher skill levels than current jobs (e.g., Johnston and Packer 1987, p. 97). Indeed, recent BLS projections show that the fastest growing jobs in the U.S. economy are concentrated in health and technical fields and require above-average education levels, as shown in the top half of *Table 5*. But such figures are based upon the percentage growth of occupations, not their absolute growth. They are a misleading indicator of absolute growth in job categories because the fastest growing jobs are typically in new fields that employ relatively few people compared to older, more traditional fields.

These differences are shown in *Table 5*, where the 10 fastest growing jobs based on projected percentage growth rates between 1986 and 2000 are compared to the 10 jobs that will generate the most new positions during that period. As the figures illustrate, the fastest growing jobs are concentrated in the health and technical fields which require higher education levels than most jobs. Yet the occupations that are expected to generate the most new jobs — such as sales workers, waiters and waitresses, and janitors — generally require lower education levels. Moreover, the first group of occupations is only expected to generate about 4 percent of all new jobs, whereas the second group is expected to generate almost 30 per cent of all new jobs. In fact, 30 occupations, out of the 480 that the BLS forecasts, are expected to generate 50 per cent of all new jobs in the U.S. economy between 1986 and 2000 (Silvestri and Lukasiewicz 1987, *Table 5*).

Table 5: **Employment, employment growth, and required education for the fastest growing occupations in the United States, 1986 to 2000 (numbers in thousands)**

	Employment		Job growth 1986-2000		% of total	Required education (years)*
	1986	2000	No.	%		
Fastest relative growth (percentage increase)						
Paralegal personnel	61	125	64	103.7	0.3	13-15
Medical assistants	132	251	119	90.4	0.6	13-15
Physical therapists	61	115	53	87.5	0.2	16
Physical & corrective therapy assistants	36	65	29	81.6	0.1	12
Data processing equipment repairers	69	125	56	80.4	0.3	13-15
Home health aides	138	249	111	80.1	0.5	12
Podiatrists	13	23	10	77.2	0.0	17+
Computer systems analysts	331	582	251	75.6	1.2	16
Medical records technicians	40	70	30	75.0	0.1	13-15
Employment interviewers, employment service	75	129	54	71.2	0.3	13-15
Total	956	1 734	778	81.4	3.6	
Fastest absolute growth (number of jobs)						
Salespersons, retail	3 579	4 780	1 201	33.5	5.6	12
Waiters and waitresses	1 702	2 454	752	44.2	3.5	12
Registered nurses	1 406	2 018	612	43.6	2.9	13-15
Janitors and cleaners	2 676	3 280	604	22.6	2.8	12
General managers and top executives	2 383	2 965	582	24.4	2.7	13-15
Cashiers	2 165	2 740	575	26.5	2.7	12
Truck drivers	2 211	2 736	525	23.8	2.5	12
General office clerks	2 361	2 824	462	19.6	2.2	12
Food counter workers	1 500	1 949	449	29.9	2.1	12
Nursing aides and orderlies	1 224	1 658	433	35.4	2.0	< 12
Total	21 202	27 404	6 202	29.2	29.0	
Total employment	111 623	133 030	21 407	19.2	100.0	12

* Highest level of schooling completed by the majority of employed workers in that occupation as of March 1986.

Sources: George T. Silvestri and John M. Lukasiewicz, "A Look at Occupational Employment Trends to the Year 2000," *Monthly Labor Review*, vol. 110, no. 9 (September 1987), Table 3; Tabulations based on the March 1986 Current Population Survey, U.S. Bureau of the Census.

Changes in the skill requirements of jobs

Changes in the composition of jobs in the economy can be forecast with much greater confidence than changes in the skill requirements of individual jobs. One reason is that there are so many different jobs in industrialized economies that vary widely in the tasks that are performed and in the effects on them of technological and organizational change.

It is commonly observed that the rising use of computers and other new technologies in many occupations must be raising the skill requirements of those occupations (e.g., Botkin, Dimancescu, and Stata, 1984, p. 80). But this assertion does not take account of the fact that most persons who use computers require no special computer skills. For example, warehouse clerks and supermarket checkout clerks typically use a computer readout device to read bar-codes on products as they are purchased, sold, shipped, and received. But the use of this device requires no knowledge of computers. Wordprocessing operators and office workers need only learn how to operate a new piece of office equipment, as they have done in the past, not how to program or understand computers. This training can be measured in hours or days, not weeks, months, or years.

A recent study of a national sample of almost 3000 small businesses in the U.S. found that the average duration of training for a wide range of computer applications in offices by those without computer skills was only about 30 hours (Levin and Rumberger 1986). The same study found that interest and enthusiasm, followed by reading and comprehension skills were far more important for learning to use the computer than extensive technical training (Levin and Rumberger 1986). In general, the many workers in the U.S. who use computers in their jobs utilize standard computer packages that require very little previous education or training (Goldstein and Fraser 1985).

Reviews of past studies on the impact of technologies on skill requirements reach the conclusion that past technologies have tended to raise the skill requirements of some jobs, while lowering the skill requirements of others, with a net result that aggregate skill requirements have not changed much (Spenner 1985, 1986; Rumberger 1981, 1987a; Flynn 1988). After reviewing the evidence on the impact of technology on skill requirements, the National Academy of Sciences concluded in a recent report:

> "... the empirical evidence of technology's effects on skills is too fragmentary and mixed to support confident predictions of aggregate skill impacts. Despite this uncertainty, however, the evidence suggests that the skill requirements for entry into future jobs will not be radically upgraded from those of current jobs." (Cyert and Mowery 1987, p. 103).

Of course, the future may not look like the past. One major difference concerns the type of technologies and their capabilities. Whereas many past technologies enabled machines to reduce the physical requirements of work, present and future machines are more capable of displacing the mental requirements of work (Rumberger 1987a). As Nobel laureate Wassily Leontief (1983) has pointed out:

> "Computers and robots replace humans in the exercise of mental functions in the same way as mechanical power replaced them in the performance of physical tasks. As time goes on, more and more complex mental functions will be performed by machines. Not unlike large bulldozers assigned to earthmoving jobs that could not possibly have been carried out by even the strongest labourers or draft animals, powerful computers are now performing mental operations that could not possibly be accomplished by human minds. Any worker who now performs his task by following specific instructions can, in principle, be replaced by a machine. This means that the role of humans as the most important factor of production is bound to diminish — in the same way that the role of horses in agricultural production was first diminished and then eliminated by the introduction of tractors." (pp. 3-4).

In total, some forces — such as employment shifts — appear to be raising the aggregate skill requirements of jobs, while other forces — such as the deployment of new, advanced technologies — may be helping to lower skill requirements, at least of some jobs. Thus the evidence suggests that the *levels* of skills required in the job market are unlikely to change appreciably in the near future. What is more likely to change are the *types* of skills required, as new technologies and new forms of work organization demand different kinds of skills — such as communication and reasoning skills (Levin 1987). We will discuss this issue in greater detail below.

Supply of educated labour

Projections of job characteristics and skill needs depend upon assumptions regarding both the demand for and supply of educated labour. The previous section focussed on factors that determine the future demand for educated labour in the industrialized countries. The supply of educated labour is influenced by a number of factors: (1) changes in the size of the population, (2) changes in the social composition of the population in terms of age, gender, and ethnicity that often imply differences in experience and preparation for jobs, (3) changes in labour force participation rates of various groups, and (4) changes in the education and training of the various social groups. Drawing on U.S. data we can illustrate the importance of these factors in shaping the supply of educated labour. We will examine recent changes in the size and composition of the U.S. labour force over the last decade and a half, from 1972 to 1986, and future prospects based on government projections for the period from 1986 to 2000.

Labour force changes

The U.S. labour force increased by over 30 million persons or 30 per cent between 1972 and 1986 as shown in *Table 6*. This growth resulted from increases in the civilian population as well as an increase in the labour force participation rate of women. The population (16 years old and over) increased by 36.5 million persons or 25 per cent, while the labour force participation rate of the population increased from 60 to 65 per cent, with women increasing their participation from 44 to 55 per cent and men decreasing their participation from 79 to 76 per cent (Fullerton, 1987, p. 21).

According to recent government projections, the U.S. labour force will continue to grow in the future, but at a slower pace. The labour force is expected to grow by 21 million or 18 per cent between 1986 and 2000 because of slower population growth and a slower growth in the labour force participation rate. The U.S. population (16 years old and over) is expected to increase by 24 million or 13 per cent from 1986 to 2000 (Fullerton, 1987, p. 21). The labour force participation rate of the population is expected to increase over this period from 65 to 68 per cent, with women's labour force participation increasing from 55 to 62 per cent and men's labour force participation decreasing from 76 to 75 per cent. The age composition of the labour force is also expected to change. The number of younger and older workers will continue to decline in the future as it has in the recent past, with virtually all labour force growth coming from increases in the prime age population as shown in *Table 6*.

The most dramatic change in the U.S. labour force is reflected in its altering racial and ethnic composition. The racial and ethnic populations in the U.S. are increasing at a faster rate than the White population because (a) of increased immigration of predominantly minority populations, and (b) higher fertility rates of minority females, particularly Hispanics. Although immigration contributed only 17 per cent of the population increase between 1972 and 1979, it contributed 25 per cent for the 1979-86 period and is expected to contribute more than 30 per cent over the 1986-2000 period (Fullerton, 1987, p. 21).

Between 1979 and 1986, Blacks, Asians, and Hispanics represented 45 per cent of the increase in the U.S. labour force (Fullerton, 1987, Table 1).

Table 6: U.S. civilian labour force by age, sex, race, and ethnicity: 1986 and projected 2000 (numbers in thousands)

	1972	1986	2000	1972-1986		1986-2000	
				No.	%	No.	%
Total	87 037	117 837	138 775	30 800	100.0	20 938	100.0
Age							
16 to 24	20 186	23 368	22 631	3 182	10.3	-737	-3.5
25 to 54	52 325	79 565	100 780	27 240	88.4	21 215	101.3
55 and over	14 526	14 904	15 364	378	1.2	460	2.2
Gender							
Men	53 556	65 423	73 136	11 867	38.5	7 713	36.8
Women	33 481	52 414	65 639	18 933	61.5	13 225	63.2
Race/ethnicity							
White	77 275	101 801	116 701	24 526	79.6	14 900	71.2
White, non-Hispanic*	—	93 725	102 615	—	—	8 890	42.5
Hispanic*	—	8 076	14 086	—	—	6 010	28.7
Black	8 748	12 684	16 334	3 936	12.8	3 650	17.4
Asian	—	3 352	5 740	—	—	2 388	11.4

* Persons of Hispanic origin may be of any race, but here are assumed to be White.

Source : Howard N. Fullerton, Jr., "Labor Force Projections: 1986 to 2000," *Monthly Labor Review*, Vol. 110, No. 9 (September 1982),

Between 1986 and 2000, this proportion is expected to increase to 57 per cent as shown in *Table 6*. In other words, the majority of new entrants into the U.S. labour force over the next decade and a half are expected to be members of racial and ethnic minorities. Population projections beyond the year 2000 as well as the large concentration of minority students in schools suggest that the proportion of minorities in the labour force will continue to increase well into the next century.

Educational preparation

The reason that these demographic changes in the labour force are so important is that they can be indicative of the educational preparation of future workers. For example, Black and Hispanic workers, on average, have lower education levels than Whites, so an increase in the proportion of Black and Hispanic workers will tend to lower the overall education level of the labour force in the absence of significant changes in the educational preparation of these groups.

Table 7: Years of school completed by persons 25 years old and over by sex, race, ethnicity, and age in the U.S.: 1985 (percent distribution)

	Years of schooling completed				
	<12	12	13-15	16	17+
Men, 25 years old & over	25.5	34.8	16.6	12.5	10.6
25 to 29 years old	14.2	41.6	21.1	15.4	7.7
Women, 25 years old & over	26.5	41.3	16.2	10.0	6.0
25 to 29 years old	13.5	43.2	22.0	15.6	5.7
White, 25 years old & over	24.5	39.0	16.5	11.5	8.5
25 to 29 years old	13.1	42.3	21.4	16.1	7.1
Black, 25 years old & over	40.2	33.9	14.8	6.9	4.2
25 to 29 years old	19.4	46.2	22.9	8.8	2.7
Hispanic, 25 years old & over*	52.1	28.4	11.0	4.8	3.7
25 to 29 years old	9.1	34.0	15.9	7.6	3.4
Total, 29 years & over	26.1	38.2	16.3	11.2	8.2
25 to 29 years old	13.8	42.4	21.6	15.5	6.7

* Hispanics may be of any race.

Source: U.S. Bureau of the Census, Current Population Reports, Series P-20, No. 415, *Educational Attainment in the United States: March 1982 to 1985* (Washington, D.C., U.S. Government Printing Office, 1987), Table 1.

To illustrate, less than 50 per cent of all Hispanics 25 years old and over have completed less than a high school education, compared to 75 per cent for Whites as shown in Table 7. Blacks, too, have greater high school dropout rates than Whites. Conversely, 20 per cent of Whites have completed four or more years of college, compared to 10 per cent or less for Blacks and Hispanics. Therefore, the increasing proportion of Black and Hispanic workers means that an increasing number of workers in the U.S. labour force could be inadequately prepared for the kinds of jobs that are being produced.

The educational attainment of minorities should improve in the future, since education levels of younger minority workers are generally much higher than older workers. For example, only 20 per cent of Blacks, 25 to 29 years old, have dropped out of high school compared to 40 per cent for all Black workers as shown in Table 7. Similarly, younger Hispanic workers have completed higher levels of schooling than Hispanic workers overall. Consequently, the educational preparation of the future work force should improve substantially as older, less-educated workers are replaced by younger, more-educated ones.

At the same time, there are other forces that could contribute to lower levels of educational preparation of the future labour force. The increasing numbers of U.S. families living in poverty and the increasing number of female-headed households could increase the number of high school dropouts and thus lower the educational preparation of future workers (Levin 1986; Pallas, Natriello, and McDill 1988). Ominously, minority participation and completion rates in higher education have subsided in recent years, partly because of cuts in government support. A continuation of this trend will curtail the growth of education levels among minority populations. That is, not only are high school dropout rates for Blacks and Hispanics higher than for Whites, but a smaller proportion of high school graduates from these groups are enrolling in higher education, and the proportion is actually *declining* over time (U.S. Department of Education 1988: 174).

Educational consequences

In the last two sections we have tried to capture some of the dynamics of both the demand for and supply of educated labour. There are a number of overall conclusions that one could draw from that analysis. First, the movement towards the application of new technologies is not necessarily associated with rapid educational upgrading of jobs. Such upgrading depends upon whether the technologies are used as a substitute for or a complement to higher level skills, and concomitant changes in the organization of the workplace, particularly the move from traditional work hierarchies to worker participation in decisions. Moreover, the supply of educated labour depends not only upon expansion of educational opportunities, but the incentives and other conditions that induce different groups in the population to increase their educational attainments.

In this section of the paper we will draw out some specific educational consequences of this analysis. First, we will explore the educational levels associated with the projected changes in jobs in the U.S. economy between 1986 and 2000. Second, we will investigate two aspects of the fit between workers and jobs, undereducation and overeducation. Third, we will address issues of general and specific skill requirements for the workplace of the future.

Estimates of educational requirements in 2000

Given the shifts in occupations that are projected between 1986 and 2000 in the U.S. by the Bureau of Labor Statistics, one can make comparisons of educational requirements for jobs between the two periods. In order to do this, we evaluated the distribution of education embodied in the employed labour force for each of the almost 500 occupations. Table 8 shows the numbers of existing jobs in each of the major occupational categories in 1986 and the distribution of education among those who were holding the jobs. It should be kept in mind that these broad occupational categories represent summaries of several hundred detailed occupational classifications. We refer to these educational distributions as the 'required' years of education for the broad occupational category. The total refers to the educational requirements for all jobs in the economy at that time.

In order to estimate comparable educational requirements for the year 2000, we used the projected changes in the job distribution that were forecast for that year. We assumed that the educational distribution for specific occupations would be about the same, consistent with our earlier discussion of the literature which suggested that there is no particular trend in terms of rising or declining skill requirements within occupations. The lower half of Table 8 shows the projected educational requirements for major occupational groups and for the total economy for the year 2000. Perhaps the most notable pattern in the table is the relative lack of change. Although the new jobs added to the economy over this period will require higher levels of schooling than current jobs (Johnston and Parker 1987, Tables 3-8), overall educational requirements for jobs in the year 2000 are likely to be quite similar to those at present, a conclusion that comports closely with the judgments of the Panel on Technology and Employment of the National Research Council of the U.S.A (Cyert and Mowery 1987, p. 103).

Table 8: Employment and required education of jobs in the U.S. by occupation group: 1986 and projected 2000

Occupation group	Employment		Required education (years)				
	Number (1000s)	%	0-11	12	13-15	16	17+
			(percent distribution)				
Existing Jobs, 1986							
Managerial	10 583	9.5	5	27	23	29	16
Professional	13 538	12.1	2	9	16	29	44
Technicians, related support	3 726	3.3	3	32	37	19	8
Sales	12 606	11.3	16	40	23	16	5
Administrative support	19 851	17.8	8	54	27	9	2
Private household	981	.9	61	30	7	1	1
Protective service	2 055	1.8	13	43	31	10	3
Other service	14 500	13.0	35	44	17	3	1
Farming, forestry, fishing	3 556	3.2	41	41	11	5	2
Precision production, craft, repair	13 924	12.5	23	53	18	5	1
Machine operators, assemblers, inspectors	7 665	6.9	33	50	12	3	1
Transportation, material handling	4 789	4.3	20	48	29	1	2
Handlers, helpers, laborers	4 273	3.8	41	45	12	2	0
Total	111 623	100.0	18	40	21	12	9
Projected Jobs, 2000							
Managerial	13 616	10.2	5	26	24	29	16
Professional	17 192	12.9	2	9	17	29	43
Technicians and support	5 151	3.9	3	32	37	19	9
Sales	16 334	12.3	16	40	23	16	5
Administrative support	22 109	16.6	8	54	27	9	2
Private household	955	.7	60	31	7	1	1
Protective service	2 700	2.0	14	43	31	10	2
Other service	19 262	14.4	35	44	17	3	1
Farming, forestry, fishing	3 393	2.6	41	40	12	5	2
Precision production, craft, repair	15 590	11.7	23	53	18	5	1
Machine operators, assemblers, inspectors	6 913	5.2	33	50	12	3	1
Transportation, material handling	5 289	4.0	20	48	29	1	2
Handlers, helpers, laborers	4 522	3.4	40	45	12	2	1
Total	133 030	100.0	17	39	21	13	10

Sources: George T. Silvestri and John M. Lukasiewicz, "A Look at Occupational Employment Trends to the Year 2000," *Monthly Labor Review*, vol. 110, no. 9 (September 1987), Table 3; Tabulations based on the March 1986 Current Population Survey, U.S. Bureau of the Census.

Are averages misleading?

Presumably, one could examine these educational requirements and compare them with the expected distribution of education in the U.S. in order to determine whether the present educational policies are adequate to meet occupational needs. One must be very cautious in doing this for both the obvious reason that the projections are open to some measure of error and the less obvious reason that employers can adjust their use of educated labour. A shortage of educated labour will be reflected in a high market cost which will induce employers to substitute capital and other inputs for educated labour. They may also expand production in countries with more favourable labour supplies for domestic production. A surplus of educated labour will induce lower costs and the opposite effects. A further concern that is not usually discussed is that an overall statistical balance in the aggregate between educational requirements of jobs and educational attainments of workers may mask a serious underlying problem of both undereducation and overeducation.

Undereducation

Undereducation refers to the situation in which members of the labour force do not have the educational experience and skills to qualify even for entry level jobs or to benefit from training that will provide upward mobility. The U.S. is now facing a rising demography of students who are considered to be educationally at-risk. This term is used to refer to students who by virtue of a lack of resources in their home or community are unlikely to succeed in schools as schools are presently constituted.

Such students are heavily concentrated among immigrants, racial minorities, poverty families, single-parent families, and those with low education. It has been estimated that at the present time about one-third of all students in elementary and secondary school are at-risk, and the number is rising because of the high levels of immigration and high birth rates of at-risk populations as reflected in the previous section of this paper (Levin 1986). A large proportion of students from these populations do not complete secondary school (Rumberger 1987c), a proportion that may be as high as half. Even those that do complete secondary school show very low achievement scores, equal — on average — to students with four years less formal schooling. This suggests that even the amount of education completed in these populations will be misleadingly high.

As jobs have shifted from menial and physical tasks to those in the services, the appropriateness of skills that are learned in schools have become a concern, even for lower-level service jobs such as salesclerks, waiters, cashiers, office clerks, and so on. These jobs require good communication skills, reasoning, numeracy, and other qualifications that have been set out by employers as well as proper work values and attitudes which have not always been inculcated by the schools and family (National Academy of Sciences 1984). In addition, upward mobility depends crucially on the ability to learn new skills which depends, in turn, on the educational foundation at labour market entry. Without these *threshold skills*, workers from these backgrounds are unlikely to experience success in the labour market (Murnane 1988). And given the dramatic rises, both proportionately and absolutely, in the size of at-risk populations, employers may face a serious and increasing challenge in attracting an appropriate labour force.

This prospect has already alarmed the business community in the U.S. as well as government agencies (Committee for Economic Development 1987; U.S. Department of Labor, Department of Education, and Department of Commerce 1988). Although the U.S. schools have tried to address the needs of at-risk populations for at least two decades, the efforts have met with only meager success (Levin 1986). The seriousness of the problem is increasing because of the massive rise in the numbers of students who are at-risk in the schools and who will ultimately join the labour force. In our view, the response must be substantial and fundamental, moving away from remediation as a strategy and in the direction of acceleration of learning (Levin 1987a). This will not only require a far greater national investment in the education of at-risk students, but it will require a fundamental restructuring of schools and educational activities.

Overeducation

At the same time that the supply of lesser-educated workers and especially those from at-risk backgrounds may be inadequate to meet the skill requirements of even the least skilled jobs, there may also be an excess supply of the most educated workers, particularly college graduates. This phenomenon has been referred to as overeducation, underemployment, or surplus schooling and has been the subject of considerable research in both the U.S. and in other industrialized countries (e.g., Freeman 1976; Clogg 1979; Rumberger 1981; Hartog and Oosterbeek 1988).

The phenomenon of overeducation is based on the fact that the supply of college graduates is increasing faster than the supply of jobs that require a college education. In the U.S., for example, enrolments in higher education increased by threefold between 1960 and 1980, producing a similar increase in the number of workers with a college education (Rumberger 1984, Table 1). During the same period, the number of jobs requiring a college education, particularly professional and technical jobs, only increased twofold (Rumberger 1984, Table 2). As a result, an increasing number of college graduates — primarily during the 1970s — were forced to take jobs where a college education was not required. Especially hurt were female college graduates. For example, a greater proportion of young, female college graduates were employed in lower-skilled clerical jobs in 1980 than in 1960 (Rumberger 1984, Table 5).

Although the size of the traditional college-age population is expected to decrease over the next decade or so in the U.S., government forecasts indicate the number of college graduates will remain fairly constant as more and more older persons return to college to pursue their degrees. Official government forecasts indicate that the supply of college graduates available will exceed the number of jobs requiring a college education by about 100,000 per year, or by 1.5 million over the next decade and a half (Sargent 1988, Chart 2). Such figures could understate the extent of the problem since almost half of all recent college graduates report that the jobs they obtained after completing college did not require a college degree (Braddock and Hecker 1988, Table 4).

Overeducation is considered a problem, in part, because it suggests that scarce government resources are alloted toward a system of higher education that is producing graduates in excess of labour market needs. While such an argument may imply that overeducation, at worst, generates opportunity costs, the evidence suggests more serious consequences. Overeducated workers may be less productive in their jobs because they are dissatisfied and exert lower levels of effort than they would in jobs more commensurate with their education and training (Rumberger 1981; Tsang and Levin 1985). As a result, individuals suffer from reduced earnings and the economy suffers from reduced economic output (Rumberger 1987b; Hartog and Oosterbeek 1988). A recent study estimated that each year of overeducation among the workforce of U.S. telephone companies was associated with a net loss in output of about $3.8 billion in 1982 (Tsang 1987, p. 248). In this case, the negative effect on productivity of overeducation relative to the existing needs of the telecommunications industry was shown to outweigh the positive effect of the additional human capital that was employed. This example suggests that the individual and social costs of overeducation can be substantial.

One strategy for addressing the underutilization of educated workers is to cut social investment in post-secondary schooling. While such a strategy has been argued by some (e.g., Robinson 1983), others have pointed out that higher education yields a wide range of important social benefits that justifies widespread social investment (e.g., Bowen 1980).

Another approach for addressing the underutilization of educated workers is to establish strategies for raising productivity that draw more fully on worker capabilities. Two such strategies are the moves towards flexible and customized production and towards worker participation.

Customized production

It is widely agreed that most advanced industrialized countries will not have a competitive advantage in producing standardized products that have very long production runs. Such products include basic steel and metals, chemicals, electronic components, many household goods, lower-end automobiles and trucks, and other goods that can be produced in a relatively uniform way for very long periods, typically years or decades. The newly industrialized countries such as Brazil, Korea, Taiwan, and others have adequate labour forces and the technical capabilities to produce these goods cheaper than the more advanced industrialized countries. Higher labour costs, workplace safety provisions, and environmental concerns in the latter mitigate against long-term competitive advantages in these products.

The comparative advantage of the more advanced industrialized countries will be their highly educated workforces and quick adaptation of advanced technologies which will provide the potential flexibility to address the customized needs of different markets. Rather than producing a few products with long production runs, firms would have the capability to meet customers' needs for a large variety of customized products with shorter production runs and high adaptability to the requirements of different clientele (Piore and Sabel 1984; Reich 1985). The availability of such customized products and services will, in themselves, spur the productivity of other firms in the economies. The very high educational attainments of their labour forces will create the basis for adaptability to design and produce a range of customized products and services. Such an economic role will require a flexible workforce with high levels of general skills rather than a repertoire of standardized capabilities that can be applied only to a fixed workplace regimen.

Worker participation

A concurrent form of change that has been emerging in the advanced industrialized countries is that of worker participation. A substantial empirical literature has found a positive relation between the existence and extent of worker participation and worker productivity (Einhorn and Logue 1982; Faxen 1978; Gyllenhammer 1977; Jones and Svejnar 1982; Kelly 1982). This phenomenon provides greater responsibility and decision-making for workers in such areas as production, training, quality control, personnel selection, and so on. Often workers are organized into teams or semi-autonomous work groups that have responsibility for producing sub-assemblies (Susman 1976). Scheduling, hiring, product quality, selection of equipment, work rotation, and product improvement are all delegated heavily to work groups.

These strategies have important implications for productivity, with many examples of dramatic improvements. For example, Saab converted its automobile door assembly from a conventional assembly line to a team approach (Logue 1981). Annual worker turnover declined from 50 per cent to 14 per cent, and quality control problems diminished as did the need for quality control inspectors. Annual savings were nine times the annual costs of the change. A major U.S. manufacturer of integrated circuits organized one of its plants according to work teams that made decisions by consensus on work processes (Gustavson and Taylor 1982). Yields were raised by 25 per cent above those of comparable, but traditional facilities, and employee turnover fell.

In the U.S., a failing automobile plant of General Motors was closed because of labour problems, low productivity, and poor product quality. It was reopened as a joint venture with Toyota to produce a Toyota model to be marketed under the Chevrolet brand. The organization of production was shifted to the use of work groups with considerable shop floor autonomy, substantial job training, job guarantees, and a just-in-time inventory system. Labour productivity of the U.S. plant rose by 50 per cent in comparison to its earlier GM counterpart, and productivity was comparable to its Japanese counterpart, despite the fact that 80 per cent of the workforce had been rehired from the laid-off GM workers (Brown and Reich 1988; Krafcik 1986).

Such changes require a reorganization of the workplace with less hierarchy and supervision and a greater scope of discretion for workers. Workers need to be able to solve problems both individually and in groups and to communicate in team meetings and other situations. They also need to be able to interpret available information and to provide leadership and coordination.

New competencies

The emerging literature on changes in work processes for both customized production and for worker participation suggest a new set of worker competencies. Our detailed review of case studies in the literature as well as preliminary observations at work sites under a project supported by the Spencer Foundation on "Educational Requirements for New Technologies and Work Organization" have identified, tentatively, the following as competencies that workers will need to function effectively in these newer work settings and that can be developed in schools:

1. Initiative — the drive and creative ability to think and perform independently. This qualification suggests greater school focus on independent endeavors for students in comparison with the present emphasis on school and teacher directed activity.

2. Co-operation — constructive, goal-directed interaction with others. This qualification argues for increased emphasis on co-operative learning where rewards are provided for cooperative process as well as for the outcomes of that process.

3. Working in Groups — interaction in work groups that is directed toward both short-term goals of efficient task or activity accomplishment and the long-term goal of group maintenance. This dimension can best be achieved by schools that organize learning tasks into group endeavors rather than the extreme emphasis on individualism and individual competition that characterize existing schools.

4. Peer training — informal and formal coaching, advisement and training of peers. The requirement for participating in this process in the workplace seems to be experience in peer tutoring in the schools.

5. Evaluation — appraisal, assessment, and certification of the quality of a work product or service. This qualification suggests that students be given far more experience in grading and evaluating their own work and that of student colleagues.

6. Communication — the appropriate uses of spoken, written, and kinesic communication as well as good listening, reading comprehension, and interpretive skills for receiving messages. These skills need to be fully developed in schools in a workplace context as well as in the cultural context.

7. Reasoning — evaluation and generation of logical arguments including both inductive and deductive approaches. This requirement contrasts with the heavy emphasis on memorization and rote learning in existing schools.

8. Problem Solving — identification of problems, generation of alternative solutions and their consequences, selection of an alternative, and implementation of a solution. The inculcation of this qualification requires experience in solving problems that are situated in a more natural — not textbook — situation with both uncertainty and ambiguity of information. Textbook approaches are usually characterized by precise information and a single correct answer rather than multiple possibilities.

9. Decision-making — employing the elements of problem solving on an on-going basis in the workplace. This dimension requires continued practice in problem solving for choosing among alternatives.

10. Obtaining and Using Information — deciding which information is relevant, knowing where to obtain it, obtaining it, and putting it to use. This qualification requires experience in selecting the types of information that are needed for problem solving and decision-making, obtaining it, and using it properly. It can be readily initiated in the school situation.

11. Planning — establishing goals as well as scheduling and prioritizing work activities. This dimension has clear school counterparts in choosing activities and objectives and in setting out activities to meet those goals over a specific time horizon.

12. Learning Skills — cognitive and affective skills that facilitate the acquisition of new knowledge, as needed. These qualifications require an orientation on how to embrace new learning situations as well as the inculcation of styles of learning that work effectively for mastering new knowledge.

13. Multicultural Skills — understanding how to work with persons from other cultures in terms of language, communication styles, and different values. The U.S. labour force is becoming heavily multicultural with its large component of entrants from minority racial and ethnic groups. Study of foreign languages and cultures as well as experience in human relations activities can be undertaken within the school setting to satisfy this dimension.

Most of these competencies are not the standard ones stressed by elementary and secondary schools in the U.S. Although students with university degrees are likely to have more educational experiences in these areas, even in these cases there is little guarantee that workers will be fully capable. And, we must keep in mind that all of these competencies are ones that may be required *in addition* to the standard cognitive and technical skills that we expect of our workers. That is, if firms continue to develop strategies based upon customized production and workplace participation, there will be an increased demand for these types of competencies. Such demands will also tend to more fully utilize the talents of educated workers, but in many cases they may exceed the capabilities of such workers. These requirements also seem to be ones that respond to the needs of small businesses for initiative, creativity, problem solving, and so on, which is an important concern since small businesses have been extremely important sources of job growth in the U.S. (U.S. Small Business Administration 1984).

What is most important is that it is not the *level* of education that is challenged, but the *type* of education that workers will need. In the final section we will suggest some implications for educational planning.

Implications for educational planning

If the analysis that we have presented is pertinent not only for the U.S., but for other advanced industrialized nations, there are some general implications for educational planning. The most important findings for the U.S. are the following:

(1) On the average it does not appear that the educational attainments of the U.S. workforce will be too low in terms of the levels of educational credentials that are needed to take advantage of changes in the economy. Indeed, there is only a very modest trend towards upgrading of the occupational structure in the direction of higher educational requirements, a change that should not outstrip the tendency towards more education in the labour force.

(2) Underneath the aggregate data there is considerable cause for concern with both problems of significant segments of the population being undereducated and overeducated for available work opportunities. Persons from educationally at-risk groups such as those drawn from poverty, immigrants, some racial groups, and broken families will not achieve either the quality or amount of educational outcome that will prepare them for entry-level employment and upward mobility. At the other end of the spectrum, there are likely to be serious problems of overeducation in that many prospective workers will find that their educational attainments exceed those required by their jobs.

(3) A successful response to the challenge of undereducation will demand a major effort to upgrade the quality of education for at-risk and disadvantaged populations to bring them into the educational and economic mainstreams. This effort will require not only more educational investment, but more imaginative approaches to curriculum and instruction as well as an integration of schooling with that of other community services to help the disadvantaged (Levin 1987a). It is probably the major educational challenge facing the U.S.

(4) A successful response to the challenge of overeducation can be built on the self-interest of firms to increase productivity through customized production and worker participation. Both of these suggest a focus on a different kind of worker, one who is not only prepared in terms of cognitive knowledge, but who also has the abilities to take advantage of a workplace that will require greater participation.

(5) The major effort of schools must be to address not only what must be learned, but how it will be learned. For example, students may need much more experience in group settings through co-operative learning and co-operative problem solving to prepare them for changing workplaces. Peer tutoring may be extremely functional in the school as a basis for workers training other workers in the workplace. Problem solving as opposed to memorization should become more prominent in the school as it becomes more important in the workplace. And as workplaces change over the four decades or so of a working life, workers must have the foundation to learn new tasks and new ways of doing work in response to changes in technology, work organization, and new products. Thus, schooling must prepare workers to adapt to change rather than to merely learn what is necessary for working in a stable environment.

Many of these issues have already been discussed in Carnoy and Levin (1985), and more detailed analyses are forthcoming on the basis of the present studies of workplaces and schools by Levin and Rumberger. Educational planning must be informed by the major qualitative changes taking place in the workplace and their educational consequences for the schools. Research on these changes and their implications and the translation of that research into planning and practice must remain a high priority in the industrialized societies.

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The economics of education: a more than slightly jaundiced view of where we are now

Steven J. Klees[1]

1.1 Introduction

Over the last decade, there have been about a dozen reviews of major aspects of the economics of education field.[1] For a number of reasons, current assessments are still found to be lacking. Almost all are done within a neoclassical optic only (for an exception see Carnoy and Levin, 1985), and even they usually offer a very narrow vision within the range of neoclassical views possible. Moreover, the certainty with which each review, as well as almost every study in the field, assesses theory and research evidence belies the clear experience that there are widely divergent perspectives in conflict. It is clear to most of us that policy-makers can hire intelligent, articulate economists to support, with research and argument, any particular policy or programme they wish to support.

If this is true, we are in need of a substantial transformation in how we examine and debate theory, research, and practice. It becomes important in particular to take a broad view of our debates about what we know and how we know it, and that is what this paper hopes to contribute.

The first part focuses on what different economic perspectives bring to the practice of educational planning and policy analysis. The second part discusses my rather unorthodox assessment of these contrasting views. In particular, I will argue that the failures of dominant economic theory, embodied in an empty concept of societal efficiency, and the failures of dominant research methods, embodied in regression analysis support for any and all positions, requires a drastic re-examination of the economics of

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education field and associated planning and policy-making practices.

1.2 Economist views of educational planning and policy analysis [2]

As the orientation note prepared by IIEP for the workshop indicated at its outset, educational planning really developed in the nineteen sixties within a real world context of unprecedented educational expansion combined with pressures for both supplying qualified manpower and for democratising education and reducing inequalities. During this same era the economics of education field grew rapidly. In many ways, the simultaneous development of the economics of education, educational planning theory and practice, and these real world pressures has been so intertwined as to make any assessment of what influenced what rather confused. What is clear to many, however, as Joe Farrell said over a decade ago, is that the educational planning field "was early on 'captured' by economists and has been defined largely in, or in reaction to, their terms".[3]

Quite rightly Farrell viewed this as a "key problem". However, the problem is perhaps less with economics *per se* than with the particular view of economics that has captured the educational planning and policy analysis field. In the reading of the economic literature on educational planning, two things are particularly striking. The first one is how little the predominant discussions and debates have changed in the last twenty years or so (Hollister, 1983). The second one is how narrow a sample of relevant economics perspectives are featured in these discussions. The remainder of this section will be devoted to a review of both the conventional perspective and alternative economics of education views. The existence of significant alternative views, even within the neoclassical paradigm, indicates clearly how the narrow and almost unchanging conventional wisdom reflects ideological dominance, and not scientific validity.

1.2.1 The conventional wisdom

Based on one interpretation of human capital theory and other aspects of neoclassical economics, what I will call the "conventional economics wisdom" applied to educational planning has been frozen in an endlessly repeated argument since the mid-sixties, when economics of education as a field first achieved widespread prominence. The argument basically consists of a rejection of "social demand" and "manpower planning" [4] approaches and the advocacy of a greater reliance on economic evaluation techniques like cost-benefit analysis and on the unfettered operation of the private marketplace.

By the social demand approach, economists refer mostly to planning driven by political goals, like the attainment of universal primary education, a 50% enrolment ratio for secondary schooling, the eradication of adult illiteracy by the year 2000, or free, compulsory public education through high school. This approach to setting goals for and constraints on planning, while acknowledged sometimes as a political reality, is almost always condemned by the conventional wisdom as not confronting the value of the trade-offs society faces in using scarce resources. From a neoclassical economics perspective almost any sweeping policy goal, such as those examples above, is suspect, because it does not pay explicit attention to costs and benefits. For example, although the education of many primary school dropouts may be efficient from the point of view of a cost-benefit calculus, the costs of educating some dropouts may exceed the benefits, thus making universal primary education an inefficient use of resources.

Economists have actually spent little time on the rejection of social demand approaches to planning, despite their continued prevalence, probably because they are so obviously inconsistent with conventional ideas of the need for analysis and (cost benefit-type) rationality in decision-making. Much more attention has been focused on a rejection of manpower planning approaches. This is probably because, in addition to being widespread, the explicit analytical connections made between schooling and the labour needs of the economy are part of the economics domain. Also fodder for the greater attention is that, embarrassingly enough in retrospect, economists were among those responsible for diffusing these techniques in the fifties and early sixties.

In his introductory text, Blaug (1970) devoted a whole chapter to summarizing the devastating criticisms he and others had made of manpower planning in the mid-sixties, concluding that:

> someone once described manpower forecasting as "a flourishing practice with virtually no theory." This is unfair, I think. There is a theory of some sort. It is just that it is far-fetched. If educational planning is ever to grow up and to become integrated with economic theory, it must repudiate this modern form of crystal-ball gazing. (p. 168)

Similarly, Windham (1975), in the *Comparative Education Review* symposium on macro-planning in education, discusses the "Herculean problems" with such an approach, arguing that:

> only those willing to make a true Kirkegaardian "leap of faith" can remain comfortable with the suggestion that a country can justify altering its educational systems on the basis of the 'needs' specified by the traditional manpower planning process. (p. 190)

More recently, George Psacharopoulos and others have provided other, more detailed, but similar negative assessments (Psacharopoulos, et al., 1983).

The fundamental criticism, repeated in all these reviews, is that manpower forecasting techniques are based on unrealistic assumptions about the world that are completely counter to those of neoclassical economic theory. Neoclassical economics views the production of any good or service as possible by a variety of techniques, and the choice between them depends on a changing world of demand, technology, and prices. Thus, contrary to what manpower forecasting assumes, the present use of labour is no guide at all to the efficient future use of labour. Moreover, to determine future labour "needs" without regard to the cost of educating that labour means manpower planning ignores the basic neoclassical premise that an assessment of the value of trade-offs must guide our allocation of scarce resources. As a capstone to this argument most neoclassical economists point out that manpower planning techniques have been neither accurate nor useful in practice.

For the past twenty years the above criticisms of practice have been complemented by the advocacy of some combination of two approaches to educational planning, one relying on explicit economic evaluation by the public sector of alternative policies, strategies, and programmess, and the other on turning more responsibility for educational decision-making over to individuals operating in the private marketplace. Both approaches reflect the neoclassical belief in the efficiency of the private sector, corrected under certain circumstances by government action.

Cost-benefit analysis, developed to provide a means by which the public sector could evaluate the efficiency of its policy alternatives in areas where the private sector, left to its own devices, could not be relied on to operate efficiently, has long been touted as a substitute for social demand and manpower planning approaches to educational planning. Recognizing that the outcomes of public sector activities cannot always be evaluated in monetary terms, the conventional economics wisdom has also recommended the application of cost-effectiveness analysis as a way of evaluating the relative efficiency of alternative policies or programmes that are aimed at achieving well-defined and similar objectives. A World Bank report by Psacharopolous, Hinchliffe, Dougherty, and Hollister (1983) has strengthened and broadened these recommendations by arguing that educational planning offices need to *abandon* their devotion to manpower forecasting and, in essence, convert themselves into policy and programme analysis offices that use a wide range of evaluation and monitoring approaches to provide relevant information for decision-making.

The other major theme of this conventional economics wisdom, which, more than the others, wanes and waxes with changes in the political climate, is to eliminate the necessity for a lot of educational planning by placing more reliance on the private sector. Milton Friedman's (1955) now classic essay on the role of government in education foreshadowed much of this thrust, with its call for significant increases in private schooling, financed and regulated at lower levels through government voucher schemes. For a time, in the mid-to-late sixties in the United States, a remarkable coalition of conservative, liberal, and radical groups pushed for implementation of such voucher systems, but they were effectively blocked by public school interests. The eighties have witnessed a resuscitation of this idea worldwide, on a much broader scale, promoted by the rise of a conservative, market-oriented, political philosophy, embodied in a widespread call for the "privatization" of many government activities.

The recent revival of interest in privatization is based in part on the neoclassical belief in the efficiency of a competitive marketplace, but it has been supplemented by the expansion of the literature in what economists call "public choice theory," which examines behaviour in non-market settings (Michaelsen, 1980). The argument being made these days is that although there may be a justification for a government role in many activities due to "market failures" (i.e., deviations from perfect competition) that make reliance on the private sector inefficient, *public* enterprises are so permeated by self-interest combined with a lack of structural incentives to force them to respond to public demand, that even an inefficient private sector may do better. As Don Lavoie (1985, p. 74) argues in his self-avowedly neoconservative critique of national economic planning, "If the government cannot be shown to do better, the 'failure' [of the private sector] is no failure at all."

Some of Doug Windham's work on educational planning epitomizes well the privatization perspective. Over a decade ago he argued that:

> educational planning should be designed in such a way as to make the maximum utilization of market forces and personal self-interest. (Windham, 1975, p. 198)

This led him to suggest such policy changes as increased reliance on private sector provision of education through voucher schemes and the removal of "distortions" in prices that affect educational decisions, for example, by paying competitive salaries in the public sector and through charging clients the full costs of education. While this last recommendation was referring to higher education, recent interest in "cost recovery" strategies has yielded calls for its wider application. Windham (1980, p.109) expands on one aspect of this argument, focusing on how central planning:

> never determine[s] the actual outcomes of policy ... [which] ... themselves are the results of millions of micro-decisions made by individuals who are responding to the planners' policies in terms of [the actual and perceived incentive patterns their policies generate].

As an example, he shows how a variety of policies led in many countries to a surplus of graduates in the arts and a shortage in science and technology, arguing that to correct such inefficiencies we need to understand and make more use of individuals' planning efforts through the marketplace.

To sum up, the conventional version of human capital theory that has basically dominated educational planning rhetoric rejects the social demand approaches to planning as "purely political," lacking any analytical, rational basis for making the tough choices we face in using society's scarce resources. Manpower planning approaches, while based on an analytical approach that explicitly connects education to the economy, are rejected as well as having an absurd foundation and as having been misleading, or even disastrous, in practice.

The alternative recommended is that planning should be based on economic and other evaluation techniques that examine the costs, effects, and benefits of proposed policies, programmes, and projects, within a framework that takes maximum advantage of market forces. During the eighties this conventional wisdom has generally argued that public provision of education should be cut back and the private sector should be encouraged to supply more educational services. Economic evaluation can be used to choose a judicious mixture of *modest* government interventions to modify the incentive structures of the education marketplace, *when* it can be shown that such modifications are in the interests of efficiency, equity, or other social goals.

The basic issue to which the rest of this paper is addressed is to show how limited this conventional perspective is, why *many* economists criticize this view, and what these criticisms might imply for educational planning and policy analysis.

1.2.2 Alternative neoclassical views

At a rather abstract level most neoclassical economists agree with a good deal of what has been called here the conventional wisdom. However, neoclassical economic theory, although relatively uniform in its belief in the efficiency of the competitive marketplace, allows for *considerable* variation in thinking about *how* and *when* the public sector should intervene in this marketplace. These differences of opinion do not often appear in the literature on educational planning but they can have enormous consequences for practice.

The only neoclassical variation in thinking that crops up with some regularity is a discussion of screening and its implications. *Much* more important for educational planning are other, less often explicitly discussed, differences among neoclassical economists lead some to argue that cost-benefit analyses, as presently undertaken, are *totally* inaccurate, requiring enhanced manpower planning methods, shadow pricing, and the analysis of many more effects of education if they are even to provide a rough guide to policy. These differences can also lead some neoclassical economists to argue that education needs even greater government intervention and subsidies than at present, at all levels. Far from pushing the privatization of education, neoclassical economists can and have argued for anything from more centralized governmental control to highly decentralized *and* highly participative governance of education. Four key belief differences among neoclassical economists that can lead to such variations in thinking about educational planning are presented below.

1.2.2.1 Enhanced manpower planning models

The conventional wisdom criticisms of manpower planning models discussed earlier reflect, in large measure, the fact that most manpower models do not consider input and output prices, which should be key to determining efficient courses of action. Nonetheless, all neoclassical economists recognize that enhanced, more comprehensive models of the economy as a whole, which include manpower *and* price considerations, may be very desirable for understanding the cost and benefit impacts of any particular educational policy. For example, Agarwala (1985, p. 16), in a summary of a report on planning issues and lessons he did for the World Bank, while supporting the conventional wisdom, points out that "theoretically everything depends on everything else and a comprehensive [modelling] approach is intellectually attractive." However, most neoclassical economists would probably argue that we do not have the ability to construct accurately the type of comprehensive models of the economy that such an approach would need.

On the other hand, some neoclassical economists would argue comprehensive models are essential to policy analysis and have tried to improve existing manpower planning models, mainly by trying to incorporate cost and benefit information. One way to do that has been to build on the considerable work many neoclassical economists have done outside the education arena, on developing comprehensive input-output, simulation models of the societal production of goods and services. Using the preferred tool of such model builders, linear programming, efforts were even made along these lines in the sixties, such as Adelman's (1966) model for Argentina and Bowles' (1969) for Nigeria. Many more of these models were developed and applied in the seventies, such as Kim's (1973) for Korea, Thias and Carnoy's (1972) for Kenya, and Freeman's (1975) for Venezuela.[5] Even more sophisticated (mathematically, not necessarily conceptually) models have been developed which examine the implications of educational policy, such as that done under the auspices of the World Bank for Colombia (Schohl, 1979).

It is not simply the intellectual attractiveness of comprehensive modelling that draws neoclassical adherents. It is that, for some of them, the alternative of using conventional economic techniques to evaluate policies and programmes is *totally* inadequate. For example, when rates of return to educational alternatives are calculated, the analyst must make projections of wages for a person's entire working life, often 40 to 50 years in the future. Neoclassical economic theory, however, tells us that wages result from dynamic labour and product markets in which technologies, preferences, and prices are constantly changing. How then can we project wages, and, more particularly, wage differences between those with different educational experiences, without projecting the future supply and demand changes on which they are based? Those that advocate the use of comprehensive models, like almost all neoclassical economists, are concerned with estimating the costs and benefits of alternatives to compute efficiency indicators, like rates of return. However, they have a strong argument that conventional cost-benefit analysis methods (based on what economists call partial as opposed to general equilibrium analysis) are likely to give meaningless results.

1.2.2.2 Measuring efficiency: the validity of rates of return

Even if we ignore the debate about comprehensive modelling, neoclassical economists still exhibit considerable disagreement over how, and the extent to which, we can develop valid and reliable indicators of the costs, effects, or benefits of a programme or policy. There are two principal issues, one concerned with the methods used to estimate the impact of a policy or programme, and the other concerned with the use of market prices to construct efficiency indicators.

Since their initiation, Rate of Return (ROR) to education studies have often drawn estimates of the benefits (and opportunity costs) of education by examining national census data that summarize wage differences between groups with different levels of educational attainment. However, even initially, it was recognized that the differences between the earnings of groups with different schooling could have been caused by a variety of factors other than education. Thus, a number of neoclassical economists argued that RORs calculated from "uncorrected" census data were inaccurate. Astonishingly enough in retrospect, these economists solved the problem by arbitrarily selecting a correction factor (the so-called "alpha" coefficient), usually set at .6, which meant that 60% of the earnings differences associated with educational differences were *assumed* to be caused by education, and then used this adjusted data to calculate RORs.

The treatment of aggregate census data as if group differences are the results of experiments revealing causality, or the adjustment of such data by out-of-the-air assumptions about the total effects of possible covariates, are obviously *such* inadequate procedures to any researcher that it is surprising economists still get away with doing so. In the seventies and eighties, recognition of this inadequacy, combined with the increased availability of individual survey data and more attention to quantitative causal modelling, have led many economists to develop models of the earnings attainment process and to use regression analysis techniques to estimate these earnings functions. In theory, the results tell us how educational differences influence earnings, "controlling" for other factors in any specific context, thus eliminating the need simply to assume a particular alpha coefficient.

Thus, it is eminently reasonable for a neoclassical economist to take the position that RORs based on census data, corrected or not, are totally invalid indicators. Unfortunately, such methods are still routinely used, especially in Third World countries, due to the unavailability of good survey data.[6] Moreover, even if good survey data were available, how to specify a regression analysis model in order to estimate the impact of education on earnings is not agreed upon. While I will return to regression analysis issues later, it is worth noting now that different specifications may lead to substantially different estimates of impact. As Eric Hanushek (1980, p. 240) has observed:

> "Estimated rates of return for years of schooling, particularly in regression estimates considering other individual differences, appear very unstable: changes in sample, changes in time period, and changes in precise model specifications yield enormous changes in estimated rates of return."

A second important issue about which neoclassical economists disagree is the extent to which the measures of costs and benefits they commonly use are sufficiently complete and valid to be useful. All neoclassical economists recognize that using increased earnings as a benefit measure is, at best, a very partial measure of the efficiency of educational investments. Some are beginning to take more seriously the need to incorporate non-labour market effects of education in order to estimate RORs. Haveman and Wolfe (1984) review studies of twenty such effects, including the impact of education on family health, fertility, consumption decision-making, spouse selection, and leisure choices, as well as more generalized social benefits like crime reduction. What is too little recognized by non-economists is that *all* of these effects, according to neoclassical theory, are an integral part of the notion of efficiency: wage impact is most studied *only* because it is easier to quantify in monetary terms, *not* because it is more important in determining what is efficient. Most neoclassical economists have argued that a focus on earnings alone provides at least a lower bound estimate of the ROR to education, since most of the above effects seem positive, increasing the true ROR. However, it is important to note that inclusion of such effects could substantially affect ROR comparisons between different levels or types of education. For example, if higher education had more such benefits than primary schooling, it could imply a *complete reversal* of the current argument emphasizing primary school improvement over higher education, on efficiency grounds.

In addition to questions about the completeness of the ROR measures used, there are serious concerns about the validity of market prices used, to measure costs and benefits, as signals of efficiency. The notion of efficiency will be examined more closely in a later section, but it is important to point out here that neoclassical economists differ greatly about whether prices in the real world accurately signal the relative efficiency of alternative courses of action. While all recognize that the real world is never perfectly competitive, most seem to assume that it is anyway, at least sufficiently so that market prices of educational inputs (for cost analysis) and of educational outcomes (e.g., wages for benefit analysis) can be used to calculate RORs. Quite common, for example on the benefits side, is Psacharopoulos' (1985, p. 565) assertion that "wage differentials can validly approximate productivity differences between more and less educated labour."

However, many other neoclassical economists are not so sanguine, recognizing that prices determined in a non-perfectly competitive world may be *substantially* inaccurate as efficiency signals. These economists argue that to develop valid and reliable cost and benefit measures it is often necessary to estimate and use the "shadow" price of inputs or outputs, instead of observed market prices. Economists use the term shadow price to refer to the true economic value of a resource, goods or service, which is the price that would be attained if *all* markets are perfectly competitive.

It is important not to see such debates as esoteric refinements: they are central to neoclassical theory and practice. The World Bank, and some other economically oriented development agencies, have treated these considerations seriously. They often estimate shadow prices and have developed handbooks that argue for their routine incorporation in project appraisal (e.g., Squire and Van der Tak, 1976). Unfortunately, other than by building a comprehensive model of the whole economy to simulate its outcomes under conditions of perfect competition, a task that, as said previously, most find daunting, it is not at all clear how to estimate shadow prices. Although occasionally the comprehensive modelling approach is undertaken, more common is an *ad hoc* subjective estimation, or estimation through complex mathematical models of how to correct for deviations in one market, assuming all others are perfect. While these issues will be further examined in the discussion of efficiency, the point to be made here is that there is substantial disagreement over the accuracy of the cost and benefit measures which are commonly used for planning and evaluation purposes. Thus, for a number of reasons, even from within the dominant perspective in the field, policy recommendations of neoclassical economists may be based on completely invalid and unreliable evidence.

1.2.2.3 Degree of Government involvement

Planning by the public sector, in education or in any other area, is aimed at how government should intervene in the economy. The conservative eighties version of conventional economics wisdom argues that efficiency is best served by using ROR-type indicators, despite their shortcomings, to guide *limited* interference in the workings of a free market system. This perspective generally holds that most governments are already intervening too much, yielding serious inefficiencies, and that, therefore, the privatization of many public enterprises is in order. The call for privatization by Samuel Paul (1985, p. 42) of the World Bank provides a typical assessment:

> Experience with the public provision of goods and services over the past three decades has generally been disappointing. In country after country, unbridled state expansion has led to ... high costs of production, inability to innovate, delays, ... straining the public budget, ... inefficiency in government, and adverse effects on the whole economy.

While Paul is cautious about turning education over to the private sector, most purveyors of the conventional wisdom these days seem to have fewer reservations.

While all neoclassical economists support a large role for a competitive private sector, this present fervour to "get government off our backs" is at one extreme of a long continuum of positions on government involvement that are taken by neoclassical economists. The liberalism of the sixties and seventies was supported by many neoclassical economists who argued for active government intervention in the economy to achieve greater equity *and* efficiency. It was not until the eighties' resurgence of conservative political philosophy in dominant Western nations, like the United States and the United Kingdom, that the privatization end of the continuum became prevalent.

Despite the strong "laissez-faire" philosophy which many businessmen and conservative economists are currently promoting, neoclassical economics can justify a *very* large role for the government. The core of neoclassical theory, embodied in their construct of perfect competition, does two main things. First, it sets forth the conditions under which reliance on the private marketplace can yield a "socially efficient" allocation of resources: producers must attempt to maximize profits and consumers must attempt to maximize their happiness; there must be a very large number of buyers and sellers of each type of good or service, so that none individually can affect prices; and there must be available accurate information for producers and consumers that give the latter complete knowledge of product offerings, quality, and prices, and the former knowledge of how to best produce any good or service. Second, this theory specifies certain conditions under which the government *must* involve itself in the marketplace *in order to achieve efficiency* or other goals. For example, the private competitive marketplace will not be efficient when economies of scale lead to large firms having some control over the market; when externalities exist, whereby the producers and consumers involved in a transaction do not capture all its benefits or costs; when, because of the nature of certain goods or services (called "public" goods), they cannot be easily sold by a competitive private sector (e.g., national defense, roads, parks, libraries, etc.); or when projects are too risky for private entrepreneurs. Moreover, there is no guarantee that a competitive marketplace will lead to an equitable distribution of goods and services, low rates of unemployment and inflation, or desirable rates of economic growth, giving further reasons for government involvement in the economy.

While in theory this framework seems quite precise, in practice it is highly ambiguous. What separates conservative neoclassical economists from liberal ones (e.g., Milton Friedman from Paul Samuelson) is principally their judgment of the extent to which the conditions exist that lead to "market failure," by which they mean private sector inefficiency. When in 1980, Mario Simonsen, the author of the best-selling neoclassical economics textbook in Brazil became the Minister of Planning there, Brazilian producers trotted out all the "laissez-faire" arguments to reduce the role of government. Much to their surprise, Simonsen countered with the liberal view that all sorts of market "imperfections" required a large government role in order to achieve efficiency and other goals. Not surprisingly, of course, the different stances taken are all supported by empirics. So, for example, contrary to the conservative assessment of development experiences as having shown that less government intervention leads to greater efficiency and growth, Thurow (1980, p. 7) argues that reducing government involvement in the economy is not supported by the evidence:

> It is well to remember that none of our competitors became successful by following this route. Government absorbs slightly over 30 percent of the GNP in the United States, but over 50 percent of the GNP in West Germany. Fifteen other countries collect a larger fraction of the GNP in taxes. ... Other governments are not only larger; they are more pervasive. In West Germany, union leaders must

> by law sit on corporate boards. Sweden is famous for its comprehensive welfare state. Japan is marked by a degree of central investment planning and government control that would make any good capitalist cry.

He later argued that "little correlation exists between the degree of government intervention and economic success" (Thurow, 1983, p. xv).

The ambiguity of the framework, and the resulting variety of justifiable neoclassical positions about the role of government in the economy, translates into a variety of contrasting perspectives relevant to educational planning. The conservatives take the view that much schooling should be turned over to the private sector, with consumers paying the full costs, and the government minimally involved, principally to provide loans and scholarships. Liberals argue that substantial government subsidy, regulation, and even provision of schooling may be necessary, for many reasons: externality and public good dimensions of education imply that many benefits exist that are not captured by the consumer, ranging from the increased productivity of family members and co-workers to the reduction of crime and the better functioning of democracy; economies of scale could lead to unacceptable (and inefficient) degrees of market power if education were turned over to the private sector (especially in small towns, but also nationally, through, for example, corporate chains of schools); public educational policies may be necessary to achieve desirable levels of employment and growth; or societal equity goals may require substantial intervention.

Even those who take a very conservative "laissez-faire" position differ among themselves. For example, Psacharopoulos (1986) argued that, even at the primary school level in Third World countries, a voucher system would be "socially efficient," while Friedman (1955) acknowledges that the common core of values and social cohesion schooling provides may require public provision of primary education. These divergences within and between the positions of conservative and liberal neoclassical economists seem to be based on their belief differences about the importance of market imperfections (or equity goals) that necessitate government action.

Conservatives see most government actions as harmful "interference" with the economy, due principally to the effect of these actions on market prices, which supposedly guide the market to act efficiently. Thus, in reviewing the lessons learned from World Bank development experiences, Baum and Tolbert (1985, p. 28) argue that:

> in many developing countries, ... a persistent and often massive distortion of prices has resulted from a multiplicity of government interventions. ... These distortions have reduced the efficiency of investment and slowed economic growth.

Similarly, Psacharopoulos (1986) decries the "omnibus of distortions" created by the public sector, such as minimum wage legislation, teacher and civil service pay scales, subsidies to education, state-managed schools, and educational planning in general.

Liberal neoclassical economists, on the other hand, see government intervention as necessary, even to achieve efficiency goals, and not as "interference" and "distortion." For example, even under perfect competition, since the education of an individual has benefits that go beyond that individual (i.e., positive externalities), large subsidies may be necessary to encourage individuals to take the efficient amount and type of education. Moreover, recognizing that the real world is far from the ideal of the competitive marketplace, liberals see a need to correct what we might call an "omnibus of market imperfections" that impede efficiency. This view leads to a large role for public sector planning, using economic evaluation techniques to examine how best to make policy interventions.

1.2.2.4 Decentralization and participation

Although they may differ on its extent, all neoclassical economists admit the need for some government intervention in the economy, including in the education sector, as discussed above. An important question then becomes by whom and by what processes are such interventions determined. What I have called the conventional neoclassical wisdom often, implicitly or explicitly, assumes that, when needed, interventions should be designed and guided by central, highly skilled planners. However, this again is by no means agreed upon. The debate in neoclassical economics about the efficiency of centralized vs. decentralized government planning, policy-making, and administration is not a theoretical one, but a practical, empirical one. It centers on what level of government has the best combination of access to relevant information, expertise to analyze that information, and administrative ability to implement any particular decision.

For the private sector, the neoclassical economics literature, when it moves beyond the common black box assumptions about firm behaviour to examine how organizations actually work, usually argues that efficient management requires a certain degree of decentralization, with each level setting goals and constraints for lower levels, but giving them a reasonable degree of management latitude and then judging their success as "profit centers" (Arrow, 1971; Radner and McGuire, 1972). The same reasoning implies decentralization can promote efficiency in public sector management, and this was an important theme in the works of many liberal neoclassical economists in the seventies. Moreover, the argument was often made that decentralization not only promoted efficiency because of better information availability and implementation ability at lower governmental levels, as argued for with respect to the private sector, but that there were often different public goals in different localities which *required* decentralized decision-making to achieve efficiency.[7]

The rise of conservatism in the eighties, while not eliminating the advocacy of decentralization, has certainly dampened the earlier enthusiasm and switched its focus somewhat. Somehow, it seems that it was discovered that the biggest barrier to development is incompetent management, chiefly in the public sector (e.g., World Bank, 1983). It is argued that in Third World countries, especially outside major urban areas, even with the expansion of training programmes it may be that the better information advantage of local authorities is outweighed by their lack of competence, necessitating more central supervision in the interests of efficiency. With the advances being made in computer technology for management information systems, some seem to hope that the information disadvantages of centralization can be overcome.[8] Other conservative economists have gone in another direction, using "the management problem" as the basis for re-defining decentralization, which always had a number of possible meanings, to include their touted option of the privatization of many current public sector responsibilities (e.g., World Bank, 1983; Cohen et al., 1981; Easton, 1983).

The same liberal/conservative debates over decentralization issues can be seen in the discussion of a related theme, participation, which has been used in a broad way to refer to increased involvement of citizens and workers in public and private sector management.[9] While the advocacy of increased participation is usually associated with the liberal to left political spectrum, participative management in the private sector has long been seen as a tool that could sometimes be used to raise worker productivity.

The argument for broader participation in public sector decision-making became widespread in the seventies (as part of the *then* dominant wisdom) in part due to the failure of many social innovations. Based on a considerable amount of research across many fields, the traditional conservative belief that the failure to adopt or "correctly" implement innovations was due to an "ignorant resistance to change," was replaced by a view that "target" audiences know more about their needs and possibilities than innovation designers. Therefore, participation by these target audiences was deemed necessary to the successful design and implementation of "appropriate" innovative technologies.[10] This same reasoning has been applied to the need for wider participation in educational planning (e.g., Benveniste, 1970; OECD, 1974; Beardsley, 1980; Rosenholtz, 1985). Although radicals criticize the instrumentalist view and limited scope such participation often takes (Papagiannis, et al., 1982) and conservatives see the transfer of many government functions to the marketplace as a way of encouraging "participation without politics," (Brittan, 1975) liberals still consider participative strategies as sometimes essential to the efficient use of resources.[11]

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Thus again, my point is that neoclassical economic theory supports a *wide range* of divergent beliefs that have important and quite different implications for educational planning. At one extreme it can argue for privatization with limited intervention in the marketplace by central planners, while at the other it can support large-scale government involvement in a decentralized and highly participative manner. Moreover, one may combine any of these views with a range of perspectives on the proper way to develop indicators for guiding the limited or substantial government intervention called for.

1.2.2.5 A Note on screening theories

In most reviews of human capital theory the major variation discussed, within a neoclassical economics perspective, is screening theory. Blaug's (1976) review of the field paper posited it as the major, and only, real challenge to human capital theory, and some still see it that way today (e.g., de Tray, 1986). Interestingly, this idea of education as principally some sort of screen, filter, or certification device was brought to the fore by a sociologist, Ivar Berg (1970) in his book *Education and Jobs: The Great Training Robbery*. Berg sets down what we all observed, that the education requirements for jobs were rapidly rising over time, and it wasn't clear that the jobs themselves were any different than when they had required less education. Through interviews and analysis of aggregate data, Berg tried to show that this casual observation was indeed true and what we had was some form of educational inflation, devoid of any meaningful increase in productivity.

While economists generally pay little attention to sociologists, this idea of screening was especially destructive of the normative policy side of human capital theory which argues that education may be a socially efficient investment to boost productivity. However, if education does not make one more productive, but only serves as a screen to allow one entry to a job, it may be valuable to an individual's future earnings, but any notion of its *social* value (in terms of earnings/productivity benefits) goes out the window. This is even true, if, as some later screeners argue, more educated people are more productive *but* education doesn't make one that way, it only filters through people who already are more able.

If this idea had been confined to the writings of sociologists, it probably would have been mostly ignored by neoclassical economists. However, Nobel Prize-winning economist Kenneth Arrow (1973) and a student of his, Michael Spence (1974), picked up on it, put it in a highly mathematical abstract framework, and showed clearly its devastating implications, not only for human capital-based policy recommendations, but also for the efficiency of competitive market systems. It turns out that even with relatively mild forms of screening, even a highly competitive private sector environment will not yield an efficient allocation of resources (see, for example, Stiglitz, 1975; Rosen, 1977; Riley, 1979; Stiglitz and Weiss, 1983; Easton, 1983, 1988).

Because it was made mathematically tractable, because it had troubling implications, and because it was really a part of a burgeoning neoclassical treatment of a broader market "imperfection," that of imperfect information, screening theory still preoccupies neoclassical economists, who continue to debate its validity. For example, de Tray (1986, p. 9) believes:

> it is a fair statement to say that the bulk of evidence to date favours the human capital interpretation (over screening).

On the other hand, Blaug (1987, p. viii) argues, rather iconoclastically, that neither human capital theory nor screening theory have much empirical support:

> Even today the evidence for or against human capital theory is inconclusive and as for the screening hypothesis, it remains a tantalizing but nevertheless unconfirmed conjecture.

In the eighties, a more critical neoclassical economics perspective has been thoughtfully applied to educational inflation and over-education dimensions of the screening idea. Sociologists did some interesting work in this area in the seventies, especially the work of Collins (1979) on the USA and Dore (1976) on the worldwide phenomenon. Economists, such as Rumberger (1981, 1987) and Tsang and Levin (1985), have developed and reinforced these arguments, finding considerable evidence to support the idea that in the USA there are many jobs for which workers' education far exceeds what is necessary to job performance (which may mean we are "under-jobbed," not over-educated, as some of these authors have pointed out and as I discuss in conclusion). This problem is probably equally serious, if not worse, worldwide, as pointed out in the IIEP (1988, p. 13) workshop orientation note:

> The credentials required for recruitment rise, probably to well above those justified by the job content. Diploma inflation makes them under-valued, paradoxically resulting in ever-higher demand for education.

Although clearly the social and individual consequences of screening and credentialism are important, the reason they are so problematic for neoclassical economists is because, if true, they invalidate educational ROR measures as useful indicators of social efficiency. Moreover, just this one imperfection calls into question the *whole* neoclassical framework that argues a competitive private market is efficient, as economists like Arrow, Spence, and Stiglitz have shown.

Most neoclassical economists would probably pat themselves on the back for not being afraid to investigate this serious challenge to human capital and broader neoclassical theory, as Blaug (1976, p. 850) did in pointing out how:

> the testing of credentialist hypotheses continues to emerge from the friends rather than the enemies of human capital theory.

However, there is little cause for congratulations. The almost exclusive focus of human capital theorists on screening as their major challenge seems to have been an excuse to retreat further into the intellectual games involved in manipulating complex mathematical models of their idea of perfection and a way to avoid the far more serious challenges discussed earlier. Screening as imperfect information is simply *one* of a myriad of reasons not to trust prices as accurate indicators of costs and benefits. Moreover, the obsession with challenges that are mathematically tractable becomes a way of refusing to face the more qualitative considerations that should give rise to more serious debate about the degree of government involvement, decentralization, and participation in educational management. The screening argument seems to have also been used as a smokescreen to avoid dealing with the more fundamental challenges to human capital and neoclassical theory raised by institutional and radical economists, to which we now turn.

1.2.3 Radical and institutionalist views

. The range of economics perspectives becomes even more diverse when we consider the views of economists who reject neoclassical theory, taking other points of departure for understanding our social world. It is not necessarily that the policy and planning options become wider in general, since, as implied above, a neoclassical theorist could support almost any overall strategy. But the specifics of that strategy, how it is designed, implemented, and evaluated, can change drastically when there are different reasons for suggesting it. In this section I examine aspects of radical and institutionalist economics perspectives and their implications for educational planning and policy analysis.

Perhaps the most well developed alternative to neoclassical theory is that of "radical" economics, a label applied to a neo-Marxist perspective, with its emphasis on "political economy" (in the United States the radical label was self-selected in large part to dampen the immediate rejection inspired in a society imbued with a fear of communism). Thanks to a few prolific economist writers, and, to the fact that a neo-Marxist perspective crosses disciplinary lines, many USA educational researchers and practitioners have had some exposure (perhaps more than most USA students of economics) to radical analyses of the structural correspondences which limit the ability of capitalism to provide equitable and meaningful development and their examination of structural contradictions that can yield significant social change. Outside the USA, in Europe, in much of the Third World, and, of course, in Eastern bloc nations, neo-Marxist views are much better known.

Less familiar in the education field is the work of institutionalist economists. Like current radical perspectives, institutionalist views developed out of the intellectual ferment of the last half of the nineteenth century (Church, 1972; Easton, 1988). Present day institutionalist economists grew out of the German Historical school, which reacted differently than Marx and his followers to classical economic theories. They argued that social "science" is different than natural science, and cannot be founded on abstract analytical deductive logic (nor on class conflict). Instead, to understand how economies operate, economists should study the historical evolution of social and institutional structures. The institutionalist economists who followed thought similarly. As Church (1972, p. 587) notes, they:

> argued that the classicists' supposedly universally valid principles had been formulated in a specific historical and geographic context and were not necessarily applicable in other periods and places where conditions were different. ... Instead of seeking to fit a situation to a general rule, the economist should conduct a thorough empirical investigation of the situation and induce from his findings the wisest policy to follow in that situation.

Institutionalists were quite prominent in the USA, in universities and in government, from the late nineteenth century through World War II. Richard Ely, an institutionalist economist, was the first president of the American Economics Association, Wesley Mitchell founded the National Bureau of Economic Research, and others, like Thorstein Veblen and John Commons were influential in social thought and governmental policy. During the nineteen twenties and thirties, nowhere were economic realities more glaringly inconsistent with neoclassical theory than in the area of labour management relations, where the collective actions of workers fought the power of big business. For this and other reasons the field of labour economics was begun and dominated by institutionalists for many years.

The advent of human capital theory in the sixties effectively ended this dominance, in part because it allowed neoclassical economists, for the first time, to incorporate the behaviour of labour into their general conception of competitive market dynamics. However, the dissatisfaction with human capital theory in the late sixties and seventies, in addition to yielding a whole new generation of radical economists, also stimulated a re-emergence of institutionalist economists, to the point where they have their own active professional association (the Association for Evolutionary Economics) and journal (*Journal of Economic Issues*).

Most, although not all, institutionalist economics takes what would generally be considered a left-of-center political perspective, in that there is a focus on inequality and power in understanding how institutions behave. Nonetheless, radical economists and institutionalists differ. In particular, institutionalists focus less on an analysis of class, correspondence, and contradiction, drawing less explicitly, if at all, on Marxist tradition. Radicals at times criticize institutionalist analyses as stopping short, in that they come up with good explanations of how institutions and social structures behave but do not explore sufficiently why such behaviour exists (Harrison and Sum, 1979; Carnoy, 1980). Institutionalists at times criticize the radical framework as too rigid and deterministic, often mired in irrelevant internal quarrels. Nonetheless, institutionalists are recognizing that the work of many neo-Marxists fits well with theirs (Piore, 1983), radicals are acknowledging the contribution and relevance of many institutionalist analyses of organizations and technology (Carnoy, 1980), and much of their analyses are so similar that they cannot be classified as one or the other.

Radical and institutionalist economics perspectives have much to say relevant to educational planning, bringing to it a view quite different from neoclassical economists. Modern day institutionalists, like Michael Piore and Peter Doeringer, along with radical economists, like Richard Edwards, David Gordon, Michael Reich, and Martin Carnoy, have been instrumental in raising the issue of labour market segmentation, which is increasingly being considered in educational research and policy circles (e.g., Doeringer and Piore, 1971; Piore, 1983; Berg, 1980; Edwards, 1979; Gordon, Reich, and Edwards, 1982; and Carnoy, 1980). While there are relatively few radical economists in the USA writing about education, those few, like Sam Bowles, Martin Carnoy, Herb Gintis, and Henry Levin, have been prolific and influential.[12] Worldwide, of course, there are many more.[13] Moreover, since a neo-Marxist view crosses disciplinary lines, what could be seen as radical economist analyses of education are offered by scholars from other disciplines, such as Michael Apple (1985), Robert Arnove (1980), Henry Giroux, (Arnowitz, Giroux, 1984), Hans Weiler (1984), and Lois Weis (1989). While few, if any, institutionalist economists in the USA focus on education, some of the work that draws upon sociological and political science perspectives, like that of Guy Benveniste (1970), Noel

McGinn (1984), John Meyer (Meyer and Scott, 1985), and Richard Rubinson (Meyer and Rubinson, 1975), can be seen as institutionalist views. A point worth making is that these researchers from other disciplines are offering economic views of education, as much so as neoclassical economists.[14]

There are, of course, differences among and between radical and institutionalist economists, but there are also many commonalities in their views of how to approach educational planning and policy analyses, which is what I wish to emphasize here. Their overall critique of neoclassical economics translates, for the most part, into a rejection of the neoclassical concepts used to guide educational planning. Psacharopoulos and Hinchliffe (1983, p. 3) state the typical neoclassical view: "In a general planning framework, the overall objective is to maximize social welfare." To most radicals and institutionalists, this idea of maximizing social welfare, embodied in an endless discussion of what is the socially "optimal" quantity, quality or type of education in any particular context, is empty rhetoric in a world of conflicting interests, where there are winners and losers from every policy decision.[15] At best, this pursuit of social optima is seen as leading to irrelevant answers to an absurd question; more likely, it serves to mask with a technical veneer what is, and should be, a political question of trade-offs between the welfare of different groups. In a way, many of these critics can be seen as agreeing with the dominant wisdom of the eighties, that the biggest problem we face in educational and other public choices is management and control. However, the principal problem is not the lack of technical, business-school, management skills training, but the lack of public decision-making mechanisms that promote broad meaningful participation of stakeholder groups and that handle the choice between alternative policies as a process of conflict negotiation, not as the search for the correct answer.

This conceptual view permeates most of the radical and institutionalist analyses of current educational planning efforts and policy recommendations. A neoclassical, technicist planning framework is characterized as an ideology, which by its concepts, language, and processes, is used to legitimate the power politics through which choices are actually made (e.g., Weiler, 1980; Levin, 1981). For example, the current worldwide advocacy of "cost recovery" strategies to finance educational (and other public) investments, supported by neoclassical analyses of the efficiency and equity of so doing, is seen as a deception. While "user fees" may be a sensible part of government finance, the technical sales pitch used to promote this policy, that there would be few, if any, losers, is false. Also seen as false is the idea that there are no alternatives for overcoming current government budget "constraints" (Klees, 1986). As Thurow (1980, pp. 11-12) pointed out, the solution to most economic problems requires that some groups "suffer large economic losses" and, when power is inequitably distributed, these "economic losses ... [are] allocated to particular powerless groups rather than spread across the population." The choice of public sector financing mechanisms, in practice, reflects what a government believes it can get away with politically. From most radical or institutionalist perspectives, to recommend on technical grounds the raising of taxes through a regressive users' fee, instead of, for example, through a progressive income tax, is simply pandering to the interests of the powerful.

Moreover, there is a certain hypocrisy to such recommendations when Western nations do not make such choices on technical grounds. In Florida there was a recent big push for a lottery to finance educational improvement, not because it is a "technically" best solution, but because a state income tax is ideologically unpalatable. Nationally in the United States, the adoption of the Gramm-Rudman bill, which forces across-the-board cuts in all federal programmes (one wag called it government by "anonymous consensus"), simply makes explicit the nation's failure at using technical means to guide choices among alternatives.[16] Similarly, the debates in the United States over general economic policy belie the ease with which International Monetary Fund economists argue that they *know* that Third World countries should follow certain "austerity" policies. Such hypocrisy is not new. For example, various critics have commented on how planning in Third World countries was often pushed by wealthy nations antagonistic to planning on their home ground.

Although the criticism is often made that the radical and institutionalist literature is long on critique and short on alternatives, there is increasing work on the latter. Under such labels as dialectical, situational, strategic, and transactional planning, frameworks for educational planning have been developed that are quite different from that associated with neoclassical perspectives (e.g., Hallak, 1980; McGinn, 1980; McGinn and Porter, 1984; and Warwick, 1980). For the most part, they depart from a view of the world in which the distinction blurs between the political and technical aspects of planning. Effective planning is seen as "inherently a political activity" (Warwick, 1980, p. 380). In a world of conflicting interests, planning should not be a search for a mythic optimal solution, but a process of encouraging participation by affected groups, "raising, exploring, and charting possibilities," (McGinn and Schiefelbein, 1980, p. 147) and negotiating choices.

These alternative planning frameworks are *not* merely theoretical exercises, but have been applied in practice for some time. McGinn and Schiefelbein (1980) provide a fascinating case study of educational planning in Chile in the late sixties, when Schiefelbein, as director of the country's Educational Planning Office, followed such a participative, actively political approach. In the seventies and the eighties, increasing dissatisfaction with technocratic approaches to planning have led to greater experimentation with participative alternatives, and to studies examining the conditions under which such participation can be effective (McGinn and Porter, 1984; Weiler, 1984; Gajardo, 1983).

To a neoclassical economist, radical and institutionalist approaches to planning may seem vague and subjective, producing no clear guidelines for educational policy. The latter would counter that the endless profusion of precise neoclassical recommendations is due to the *erroneous* belief that they have a technical efficiency criterion by which to choose among alternatives in the social interest. Relying on the marketplace is no answer either. Most radicals and institutionalists would agree with Windham's (1980) argument that the analysis of the incentives facing individuals in making their educational choices is of paramount importance to educational planning in any society, capitalist or socialist. However, such critics would say that leaving the determination of incentive structures to the marketplace is not in any way socially "optimal," but is an abrogation of collective responsibility. Setting the parameters on market incentive structures *should* be the business of public sector planning and policy-making. If there are no valid technical criteria to guide social choice, as implied by a conflict view of the world, then a belief in democratic values necessarily leads to a messy, participative, negotiation-oriented collective process of defining, analyzing, and selecting among alternative policy options, which in turn shape the incentives that individuals face.

1.3 Concluding assessments

Where are we now in the economics of education? The argument of this paper, thus far, is that there are a *wide* array of competing views, each with *very* different implications for policy and planning. Even for a neoclassical economist, there is no reason to believe in what I called the conventional wisdom. A neoclassical economist can believe that it is very easy to construct valid and reliable indicators of the efficiency of alternative policies or that it is very difficult, necessitating the theoretical and methodological sophistication required for accurate regression analysis research or for the development of comprehensive models of the economy. With respect to the efficiency of alternative governance structures, a neoclassical economist can argue against privatization, believing that large government leads to a more efficient allocation of resources, and that more decentralization and/or participation are necessary. One may combine a number of these points of view in different ways. Any combination clearly implies a different approach to educational planning (as well as to a myriad of other topics). Radical and institutionalist economic views add more alternatives, and disagreements among them add more still. For example, one can argue that planning in a capitalist society will always aid dominant interests, or that careful, politically minded planning that encourages participation and negotiation can have positive effects, or that much planning has long term positive results, since it necessarily exacerbates existing contradictions.

The domination of one *very* narrow version of neoclassical economic theory in educational planning and policy analysis for the past two to three decades in no way reflects the superiority of its ideas. As Kuttner (1985, p. 84) argues:

> The economic orthodoxy is reinforced by ideology, by the sociology of the profession, by the politics of who gets published or promoted and whose research gets funded. In the economics profession the free marketplace of ideas is one more market that doesn't work like the model.

All of us concerned with education and development, economists or not, thread our way through the debates above in some form, and come to different conclusions, with all of us believing that we have logic and evidence on our side. This situation implies the need for much more active debate among us, and, in that spirit, I wish to conclude with my rather heretical assessment of these competing views.

Most fundamentally, I believe that collectively we have been deluding ourselves increasingly throughout this century in our approach to understanding society and social policy. A technicist, rationalistic view has increasingly dominated in rich countries and poor, in capitalist countries and socialist, embodied in notions of scientific management in the nineteen thirties and in cost-benefit analysis today. I believe this entire perspective is, for the most part, bankrupt, and nowhere is this bankruptcy more evident than in neoclassical economics, which is one of the strongest bulwarks of such a rationalist, technicist framework.

Most directly, I think the complete failure of neoclassical economics is evident in the emptiness of its concept of efficiency. More broadly, the failure of current technicist approaches to policy and planning, which is not confined to economics, is most evident in our inability to agree on "facts," in terms of what the impact of any policy or programme has been or will be. Below I first sketch out the basis for these two beliefs, before concluding with some thoughts on their implications.

1.3.1 The meaninglessness of efficiency

It is as difficult to argue against the idea that a society should organize itself efficiently as it would be to argue against notions of freedom, democracy, and fairness, and indeed, I do not wish to do so. However, the question is what do we mean by efficiency (as it is with freedom, etc.). All versions of neoclassical economics revolve around its construction of one grand, abstract, and intricate concept of what efficiency means, referred to as Pareto, economic, or social efficiency (or optimality). Simply defined, it is a state of the world in which resources are allocated in such a way that a point has been reached where no one can be made better off without making someone worse off. This definition leads to neoclassical economics' dichotomization between efficiency and equity, in that efficiency encompasses making all possible choices under which no individual loses, and equity means trading off one individual's welfare against another's.

This definition has allowed neoclassical economists to don a rather unusual technical hat in their policy advisory role. In keeping with a positivist position, they argue that, as objective researchers, they uncover facts, but do not judge values. However, since what they uncover are efficiency facts, and since we all should agree that making some better off without hurting anyone else *should* be done, they feel they can go beyond simply laying out the impact of alternative choices, to the recommendation of selecting those most efficient.

Although there is a certain beauty to this concept of efficiency in theory, in practice there are serious problems with it, even within neoclassical economics. In particular, two features of the real world are devastating. First, in practice, there is never a policy whereby no one loses. As Thurow (1980, p. 17) argues:

> Every time a tax is levied or repealed, every time public expenditures are expanded or contracted, every time regulations are extended or abolished, an equity decision has to be made.

To call it "efficient" to take $1.00 from one person and use it to create $1.10 worth of something *for someone else* simply perverts its definition, destroying the idea that we can separate equity concerns from some unbelieveable "no-loser" notion of overall efficiency.

Second, even if winners and losers were not everpresent, making it theoretically possible to separate the neoclassical idea of efficiency from equity, the paradigm itself recognizes that market prices cannot serve to measure efficiency. This criticism is embodied in what neoclassical economists call "second best" theory, which says that with only one small deviation from *perfect* competition (e.g., the existence of one monopoly), prices in *all* markets are unreliable guides to efficiency. In the real world, where all economies are very, very far from perfectly competitive behaviour, there is no basis for accepting the social legitimacy of prices to value eduction or any other activity. This implies that neither following the "invisible hand" in the private sector nor following cost-benefit analysis in the public sector will lead to the "social" interest.[17]

Thus, even if we accept the validity of this theoretical concept of efficiency, there are strong grounds for believing it is non-operational: a project with a high positive ROR is not necessarily any more efficient, *in neoclassical terms*, than one with a negative ROR if prices are no guide to efficiency. From this perspective, the endless cry of conservative neoclassical economists, embodied in the recommendations of agencies like the World Bank, that government actions have yielded a "massive distortion of prices" and that "'getting the prices right' is therefore a fundamental lesson of development experience," (Baum and Tolbert, 1985, p. 28) becomes an ideological act of faith, not a technical, objective fact.

It is unclear how economists have gotten away for so long with such a patently absurd notion of efficiency. To argue that with $1.00 worth of resources it is more "efficient" to create $1.20 worth of yachts than $1.10 worth of rice is simply trying to remove the hard social and political choices we face to a never-never land of technical virtuosity.[18] Part of the problem is that even few of the radical or institutionalist critics challenge the notion head-on.[19] And, in practice, even socialist oriented societies have been seduced by the ability of cost-benefit analysis to obscure the politics of resource allocation decisions. Fortunately, we are seeing more work like that of Campen (1986), Stewart (1984), and Self (1977) that carefully dismembers these cherished notions.

We all want some sort of efficiency in the use of resources, in the sense that we want to get the most output for the least input in any endeavour, but we all evaluate the worth of outputs and inputs differently. Perhaps the best idea of what efficiency might mean revolves around long run sustainability of resources, as discussed by thoughtful development theorist-practitioners like E. F. Shumacher (1973), Hazel Henderson (1978), or Frances Moore Lappé (1988), but even these ideas are very imprecise and not easily applicable to most resource allocation decisions. I agree strongly with Lappé (1988, p. 2) who argues:

> that we scrap the efficiency argument until such time as we are ready [and able] to develop a real efficiency measure.

1.3.2 We can't determine the facts

Perhaps even more heretical than my belief that there is no useful overall idea of what efficiency means is my equally strong belief that we have *no* ability to uncover casual "facts." There is ample evidence that we cannot get even rough agreement on what the impact of any particular policy or programme intervention *was* in the past, let alone what it will be in the future. This issue takes us out of the realm of economics and into all our fields of study, raising for me fundamental questions about the research enterprise and its relation to policy and planning.

The evidence to support this view becomes clearest when we look at what the dominant research methods wisdom argues is the most accurate way of getting objective and reliable measures of the effect of one variable on another — quantitative causal modelling operationalized through some form of regression analysis. Given the difficulty of doing controlled experimentation on any questions of social interest, more and more researchers employ such models and methods as a way of separating out the effects of variables of interest from other factors that may affect the outcomes under study. With respect to educational planning, almost all quantitative studies of the effects of educational inputs on outputs, or of educational attainment on outcomes like income, unemployment, job satisfaction, or productivity are based on regression analysis studies. More generally, this is the dominant form of answering *any* basic or policy research question in economics and sociology, and is becoming more common in all other social science disciplines and allied fields of study.

There are both theoretical and empirical reasons to argue that such methods have provided *no* useful information. On the theoretical side, regression analysis is a lot like perfect competition — it gives accurate measures of impact *only* if the model and its operationalization are perfect and it is admitted by all practitioners that the models *never* can be. For example, with respect to two of the most studied areas relating to educational policy and practice, the alternative specifications that are found for earnings functions and educational input-output functions are literally inexhaustible (Klees and Milton, 1989; Hanushek, 1986). The consequence is that when undertaking any regression study with a good data set, we go on an endless fishing expedition through these alternative specifications until we turn up some results we find agreeable. There is *never* replication in any of this literature, in that each study uses a different model; models are only kept close to identical when one wishes to "prove" wrong the results of another.

The major empirical evidence that this quantitative causal modelling cannot yield agreement on causal facts is that it has not. There are *interminable* social science debates about the impact of *any* variable on *any* phenomena of interest: of education on income and status; of ability, class background, and school resources on educational achievement; of television on violent behaviour; of monetary and fiscal policies on inflation; of various factors on mobility, equity, job satisfaction, or "modern" attitudes; etc. The endless debates, using such models, about the impact of any social experiment like Head Start, job training programmes, or income maintenance projects offer the same lesson.

The problem is *not* the often heard criticism of research in the Third World countries, a lack of good data, money, expertise, and time. All of the above disputes exist precisely *because* millions of dollars and lots of time and expertise were devoted to each question. The reason James Coleman's studies are always so contestable is because he uses large data sets and other researchers, with time and imagination, can find that school inputs do matter, that integration does not cause "white flight," or that public schools are as good as private. From this perspective, for example, George Psacharopoulos (1985) can argue that diversified secondary schools in Tanzania and Colombia have been ineffective, because he relies on one study alone, undertaken from one theoretical point of view. In the United States, where the impact of academic vs. vocational curricula has been studied for decades, there is again endless debate, even in terms of one narrow outcome like their impact on earnings. This same argument is true of the research undertaken by Steve Heyneman and others purporting to show the effects of school inputs on achievement in Third World countries. With one study per country you show clear effects, whereas if you did multiple studies using good data sets, as has been done in the USA, you get *no* clear or consistent results.

I do not single out Coleman, Psacharopoulos and Heyneman because they are bad practitioners; on the contrary, they are quite good at it. *The problem is that there is no good practice possible.* We cannot specify a sufficiently accurate model of why incomes differ, why achievement differs, or why any other social outcomes differ. We cannot even do so for a substantially physical process like agricultural production. The "fudge factor" in all our research, which tries to control for "statistically" what it cannot control for physically, is so great it even allows some researchers to deny that there is evidence that smoking causes lung cancer (especially when their research is funded by the tobacco industry). This lack of ability to uncover impact is why ex-President Reagan, Prime Minister Thatcher, and hordes of supporting researchers could actually believe that tax breaks for the rich have helped the poor, as well as allow many other researchers and politicians to believe exactly the opposite.

This state of affairs seems so overwhelmingly evident, that I find it scarcely credible that challenges are so rare. Unfortunately, the dominant view has so strongly set the terms of trade in the research and policy arenas that the critics have felt forced to try to beat them at their own game. So the attacks of radical economists and sociologists on mainstream thought are often "proved" using the same statistical methods. And the resurgence of more qualitative research and evaluation methodologies have been dominated by an attempt to show that they are just as objective, reliable, and replicable as quantitative methods.

Fortunately again, we are seeing some glimmers of sanity emerging. Even among neoclassical economists, there is a growing minority casting doubt on the utility of such methods (Leamer, 1983; Lovell, 1983). More broadly, serious discussions of the implications of a post-positivist perspective are becoming widespread (Smith, 1984; Smith and Heshusius, 1985; Weiler, 1988; Garrison, 1986). As in the case of the use of "efficiency," I believe there is no ameliorative solution – again we must abandon the easy way out of tough questions that we have tunnelled into.

1.3.3 Implications for what to do and what not to do

There are no magical solutions or easy alternatives if my analysis is correct. It is, as usual, much easier to say what *not* to do than what *to* do, but I will try to conclude with a little of both.

There must be a concerted effort by all those concerned with development issues to force neoclassical economists to abandon their religion. As Thurow (1983, p. xix) says:

> in economics today, "The Theory" has become an ideology rather than a set of working hypotheses used to understand the behaviour of the economy found in the real world.

And, in some ways it is getting worse. Up until recently, neoclassical economists used their framework and methods principally to advocate an overall approach to selecting policies, with the specific recommendation depending on the analysis. However, in education for example, all of a sudden the conventional wisdom seems to be arguing that we know some basic policies which are best worldwide: that primary education is the best investment; that improving the quality of education, especially at lower schooling levels, is more efficient than expanding access; that general education is better than vocational education; or that poor management is our key development problem and substantial privatization is the answer. Thurow (1983, p. xix) likens such developments in economics as analogous to the "recently witnessed ... return to religious fundamentalism" signifying "a desire for psychological certainty in a world that is, in the last instance, uncertain."

There is some evidence that there are internal pressures to change. Uncomfortable musings or outright dissent have been expressed in recent talks to the American Economics Association meetings by noted neoclassical economists like Kenneth Arrow, Richard Freeman, James Medoff, Wasily Leontief, Tibor Scitovsky, and Robert Solow. But the history of social science change clearly indicates that the pressures will have to be external.

As one small step toward needed changes, I believe that we all should insist that the word "efficiency" be stricken from assessments of policy and planning options. It is not that the information economists report is irrelevant to decision-making. However, if we refuse to couch it in terms of the efficiency icon it becomes simply one more (and probably minor) piece of input to social choice. For example, economists could report that higher education costs so much and students who graduate seem to earn X amount more in their first year of work than secondary school graduates, have such and such unemployment rates, etc. Wrapping this data in the nonsense of a rate of return, where you take one year of more or less real earnings data and project it 40 years in the future (no other field would be allowed to get away with this), assume wages equal productivity (along with 1001 other assumptions), and then call it all social efficiency is the height of absurdity. To believe this fictitious nonsense that it is useful to compare the relative worth of yacht making with bean production, primary schooling, health care, and everything else is, at best, wishful thinking, and, more likely, is a way of concealing the self-interest of all parties to its use.

Moreover, with the demise of efficiency, it becomes clearer why *total* costs and benefits are almost never of major interest in actual decision choices and perhaps should not be. We all recognize that in practice decisions are made in ways that reflect the bargaining power of the various groups which bear the costs and which benefit of policy or planning decisions. Economists have offered a look at *total* costs and benefits to society, operationalized in their rate-of-return calculations, as a way out of the politics involved in assessing who gains and who loses. However, even if ROR estimates measured accurately the costs and earnings due to schooling, I can see no legitimate social-accountant-in-the-sky vantage point from which one can say that the educational level with a 20% ROR is socially better or more "efficient" than the one with 10%. To choose between higher education and primary education investments means choosing quite different futures for different people, with complicated effects on many different aspects of our socio-economic system that are not even vaguely represented in ROR measures. Thus, knowing the conceptual and measurement problems with ROR, it is difficult to see how they could be even *partially* useful information to social decision-making. On the other hand, cost-to-whom and earning-for-whom information about the consequences of alternative investments is one relevant element in examining the tradeoffs and conflicts involved in any social choice. To pretend to examine the payoff of educational (or other public) investments to "society as a whole" and call that efficiency is to forget that all investments have different payoffs to different groups and to reify the real world price system into some final adjudication of values.

There may be some utility to be had from the realms of neoclassical economics. At the end of a fascinating and highly critical book entitled *Benefit, Cost, and Beyond: The Political Economy of Benefit-Cost Analysis*, James Campen (1986) tries to salvage something from the wreck, arguing that there is some worth in two features of the benefit-cost-analysis mentality of neoclassical economics.

> The first is its nature as a means of systematically using organized human rationality to identify and evaluate the consequences of proposed collective decisions. The second is its orientation toward valuing all benefits and costs, whether or not they enter into the financial calculations of individuals or firms.

What Campen had in mind I believe is similar to what I have found most useful in neoclassical economics — at its best, it encourages systematic rigor in thinking, a sort of new Latin perhaps. As part of that thinking it moves beyond a closed view of the individual, firm, or public sector agency to say that there are usually costs and benefits to their actions which they do not bear but which should be considered in decision-making and in organizing decision-making structures. Unfortunately, neoclassical economics journeys too far beyond this point, focused on some magical belief that we can go beyond specifying what these various costs and benefits to different groups may be, which is difficult enough (whether measured in money terms or any other way), to somehow adding them up to decide what the overall social interest is.

More generally, not restricted to economics, I believe we need to make some drastic changes that reflect our very modest ability to estimate what the effects of any programme or policy will be. We must exert collective pressure to force researchers and policy-makers to abandon the quantitative and positivistic social science stance that is dominant. As a first and important practical step I believe we have to completely abandon regression analysis as a tool. Like the idea of "efficiency," this tool tortures and distorts what could be some interesting data and wraps it in a false technical veneer of causal truth. It is not that quantitative data is irrelevant. However, we need *face valid data* (that we can then interpret in various ways to be sure), which, to me, basically means going back to cross-tabs. Survey data can show that women, on average, earn $.60 to the $1.00 men get, or that for college educated women it's $.75. Why this is so, and what can be done about it, are questions we need to argue about. But to believe that if we find the right quantitative model, we can crank through anywhere from twenty to two thousand possible variables to find out to what extent income differences are caused by labour market discrimination, tastes, educational differences, etc., is again simply absurd. As is the belief that we can use such techniques to compare the relative effectiveness of investments in textbooks or teacher training on cognitive achievement.

So how should we engage in policy and planning in the real world? Although there are no clear answers, there are a number of elements which fit with some of the radical and institutionalist economist views of planning and policy-making discussed earlier. Banning the word efficiency and abandoning regression analysis are, of course, merely first steps. I believe we live in a world in which there is no overarching technical perspective from which to compare primary education investments with ones in higher education, let alone education vs. health care vs. bean production vs. yachts, etc. Moreover this is not only due to conflict about values, but also because "facts" are so theory/value-laden and so complex to untangle that we always have strong disagreement about what the impact of any variable or programme or policy was or will be. To me this means that conflict and debate have to be given a *central* place in how we structure and engage in research, planning, and policy.

I do not intend my argument to be anti-intellectual, despite my belief that we have increasingly used social science in a pseudo-technical way to hide the ideological basis of our studies and recommendations. We need to abandon the technicist rhetoric and approaches that dominate planning, policy, and research and develop a new (or bring back old) conceptions of social science. We need much more thought and dialogue about what a new post-positivist view of knowledge, evidence, and argument mean, as being explored by people like Patti Lather, John Smith, Hans Weiler, and a host of others. In a world where there is no agreement on facts or values, we must explicitly recognize that researchers and planners can only supply partisan information. This means that *all* research and policy efforts should be explicitly designed to examine competing perspectives. We need more broad-ranging, thought-provoking research and policy analyses which cross disciplinary and subject matter boundaries.[20]

Research and planning activities need to become means for uncovering, supporting, and strengthening the debates among all participants in our social world. Especially important from my perspective is for researchers and planners to give voice to the perspectives of the many disadvantaged and disenfranchised who are so rarely heard form. If all the time, money, and effort that now go into the modern alchemy of researchers and planners search for some mythic "correct" solution went into talking to and observing students, teachers, parents, schools, researchers, policy-makers, etc., there could be much to learn.

We need to challenge much more conventional and dominant modes of thinking and this "counterdiscourse" must be institutionalized in a variety of ways for it to have any power. As an example, in Colombia, teacher union organizations have been able to mount alternative research support to challenge effectively dominant research and policy paradigms. On the international scene we have some degree of counterdiscourse, for example, between research approaches and policy work taken by agencies like the World Bank and USAID, on the one hand, and that done by others like IDRC, SAREC, and IIEP. We need to devise ways to strengthen the counterdiscourse between such agencies, and within as well, although that is more difficult.

As pointed out in this workshop, when defining research and planning agenda and approaches, we must pay closer attention to the context in which we are working. Educational research and planning in many ways loses its meaning when there are not even the most minimal *preconditions* to make it useful. When school facilities and supplies are seriously inadequate, when teachers have no training and minimal pay, when students and their families see that the economy offers little, if any, reward to schooling and that their situation is deteriorating not improving — conditions that affect much of the Third World — research and planning are too often empty exercises to employ the well-off.

This is not a call to pessimism and despair, but to realism. As researchers and planners, we must confront what it means to operate in this world, not ignore it. For example, the currently touted idea of aiming toward providing a "minimal learning package" to all primary school students could be a small but positive step towards confronting the appalling situation we face as long as it is not wrapped up in the nonsense that studies have demonstrated what the "optimal" package is. If implemented in a way to allow local choice as to the nature of the package, it could be a sensible way to provide some basic needed resources.

To conclude, I would emphasize three points. First, there is always a need for some more data and research (which, of course, is not inconsistent with my belief that much of the research we currently do could and should be abandoned). In many countries we are lacking the most basic data on enrolment, attendance, resources available and used, etc. Beyond basic data we need research that tries to understand why people do what they do. Economists are correct in saying that the incentive structures faced by individuals and organizations are of key importance, they are just wrong to assume that those provided by an unregulated market have any claim to godliness. Nonetheless, to make policy improvements we need to understand better why children, teachers, administrators, policy-makers, and researchers behave as they do. Much of this we already know. Much does not need huge studies to find out. Recently, for example, some have been puzzled about why primary enrolment rates have been dropping in certain Third World countries. A few days spent talking to parents, teachers, and children where this is happening should give us a good idea. We must remember that it is perceptions that govern behaviour, thus we need to look more qualitatively at what is governing the whole range of actors in the educational enterprise.

Second, given the recognition that we disagree about facts, that key information concerns perceptions, and that our use of expertise has been destructive to democracy, planners must actively search for ways to broaden the participation of all groups in the definition, collection, and interpretation of information. This implies that a *key* activity of planners should be engaging in negotiation and conflict management, removing the false separation of the technical from the political.

Finally, I believe my view implies that those of us concerned with education have to be trained, have to think, and have to act much more broadly than we do now. Most particularly, we have for too long been too passive in being a wagging tail to the education and labour market mismatch idea. Certainly, part of the reason for education is to make us better workers. But we have embedded this idea in a lot of quasi-religious nonsense about the sanctity of "the market" determining what employment should be, coupled with a belief that if we provide a better education, jobs will become better.[21] This latter view basically follows the supply-side philosophy embodied in what economists call Say's Law: supply creates its own demand. However, economists in this century have long since rejected Say's Law as necessarily being true in any market, and the market for labour is no exception. While the supply of educated labour will surely *influence* the type of technologies producers of goods and services use, and, therefore, the amount and nature of jobs created, the demand for labour depends on a host of other interrelated factors. To believe that simply by increasing our supply of educated and skilled workers, such workers will be demanded and their skills utilized is simply "to be seduced by the siren of wish fulfilment" (Levin and Rumberger, 1987, p. 334).

Moreover, there is an irresponsibility to this educational supply-side approach to our social and economic problems. The perhaps apocryphal story told about Werner Von Braun is relevant. When asked about his role in the death and destruction caused by Germany's V-2 missile programme in World War II, his response supposedly was something like "the responsibility of my department was getting them up, where they came down was outside my jurisdiction." Regardless of whether this was really Dr. Von Braun's attitude or not, we have too many examples of such ostrich-like behaviour, in all areas, and education has been a prime instance. It has always been easier to blame school systems for our social and economic problems than to face the need for more far-reaching changes. However, the missiles we are sending up are our children, and to give them a good education is to promise them that it will be rewarded. To cross our fingers and hope that such will happen, when there are substantial reasons to believe that it may not, is the height of irresponsibility.

Beyond being irresponsible, an educational supply-side approach is bankrupt because it is *unworkable*. The missiles we are sending up are *intentional, purposeful* human beings, and how they go up through our school system, will depend largely on what they and their families see ahead for themselves, in work and in life. One thing we have learned from countless studies in all the social sciences, as well as from common sense, is that people respond to the incentive structures they perceive. Moreover, their perceptions are usually reasonably accurate. Most people are able to see that employers and jobs do not demand thoughtful, well-educated, creative employees, nor do governments seem very interested in such qualities in their citizens, except at the rhetorical level. Nor, contrary to popular mythology, do jobs seem to be getting better, in their nature or in their pay. Even in wealthy industrialized nations like the USA, the deskilling and automation of work seems to be increasing (Klees and Papagiannis, 1989; Levin and Rumberger, 1987, 1988). Under such circumstances, there are no strong incentives to study, to learn, or to think and all the well-intentioned reforms to teach better basic or higher order skills will, at best, have very limited success.

My point is that we have to work on *both* the supply and demand sides of the educational equation. Leaving the creation of jobs to the competitive market place, as much of neoclassical economic ideology argues, is not a solution, but the source of the problem. That is, beyond being thoughtful about educational policies that can yield better educated people, for such policies to work, we *must* also be thoughtful about social and economic policies that can yield better quality work opportunities. However, we can no more leave the latter to economists than we can leave the formation of sensible nuclear power policies to engineers and physicists. Those concerned with making educational policy must also concern themselves with policies that ensure better education is utilized and rewarded. We cannot just send the missiles up and hope others will take responsibility for assuring that they have a good place to come down.

It is not at all clear exactly how we go about specifying and instituting the type of far-reaching transformations discussed and implied in this paper. They go far beyond the economics of education and, indeed, far beyond issues of social science and educational planning and policy. This is because our social fabric is of one piece and what underlies basic educational problems interconnects closely with those of war and peace, wealth and poverty, environmental health and destruction, etc. We need not to be afraid of moving beyond incrementalism to discuss fundamental social change. Indeed not only our educational health, but our very survival may depend on doing so. Systems of belief, like neoclassical economics (and much of dominant social science), which obscure this needed dialogue behind a cloud of simplistic and mechanistic determinations of what is in the social interest are hazardous to that health. Who knows, if our attention were directed towards research, planning, and policy-making as dialogue, participation, and negotiation we might even find more agreement than we think and perhaps there is a chance we could pull ourselves out of the social mire we have been sinking into ever deeper.

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References

[1] See, e.g., Blaug (1976, 1985, 1987), Bowman (1986), Carnoy and Levin (1985), De Tray (1986), Hanushek (1986), Lockheed and Hanushek (1988), Psacharopoulos (1986, 1987), Psacharopoulos and Woodhall (1985), Rosen (1977).

I chose the title of this paper as a tribute to the work of Mark Blaug, one of the foremost economists of education. His early work is some of the best of the neoclassical genre and his 1970 book, an *Introduction to the Economics of Education*, is still the best neoclassical text in the field (which, unfortunately, also says something about the stagnancy of the field). However, it is Blaug's evolution over time, from his famous 1976 paper, "The Empirical Status of Human Capital Theory: A Slightly Jaundiced View," to his 1985 re-examination of the field, entitled, "Where Are We Now in the Economics of Education," that sets a standard of openness to competing theory, data, and argument that our ossified field badly needs to emulate (also see Blaug, 1975, 1983, 1987). As a note of warning to the reader, one of my colleagues, Peter Easton, recommended that if I wanted to preserve the "jaundice" metaphor in the title, it would be more accurate of the view I present here to label it a "cirrhotic" view!

[2] Some of this section comes directly from Klees (1986), which provides further depth on some topics.

[3.] Farrell (1975, p. 202). The fact that economics has "captured" the planning field does not, of course, mean they should have, or that other disciplines have little to say. Don Adams (1988) provides an excellent broader characterization of what underlies educational planning and policy debates, which agrees substantially with the conclusions reached here (although I have less faith than he in even the limited relevance of what Adams calls the "rational planning model").

[4] Despite my unhappiness with the male oriented term, "manpower planning," I will continue to use it for lack of an acceptable alternative.

[5] See Psacharopoulos (1987) for a review of such models.

[6] For example, although Psacharopoulos' (1985) most recent study of international RORs to education does, in part, use the results of earnings function studies, it also reports the results of many studies based on census data and treats the latter as if they were valid and reliable indicators.

[7] This view is reflected in the now classic article by Charles Tiebout (1956) who essentially argued that, in a country like the USA, people often "voted with their feet" for the provision of some public services (especially for school quality), by choosing as their place of residence a community of like-minded individuals.

[8] In wealthier countries, many interpret MIS development in the opposite way: it can help decentralize by allowing lower level managers access to better information and communication. I believe that, for the most part, this interpretation is the same wishful thinking that accompanied the much greater fervor with decentralization in the seventies. Much of what passed and passes for decentralization was and is a self-serving relinquishment of minor decisions. To some extent, all central authorities seem to want from MIS systems is, for example, to yield information sufficient to avoid the selection of a school location on the wrong side of an impassable river.

[9] While I will not focus on the differences between decentralization and participation, they are not identical concepts. One can argue for decentralized government with little participation, or for participation in centralized planning and policy-making. See Cohen, et al. (1981) and Easton (1983) for a discussion.

[10] For supporting research on agricultural innovation see Whyte (1977), on communications innovation see Rogers (1976), and on educational innovation see Fullan and Pomfret (1977) and Papagiannis, Klees, and Bickel (1982).

[11] Such strategies have even been incorporated into the repertoire of development agencies like the World Bank, as part of "managing people-centered development." See, e.g., World Bank (1983) and Cernea (1984).

[12] Samuelson (1980, p. 792) estimated that radicals number "at least a tenth of USA economists." For radical analyses of education see, e.g., Bowles and Gintis (1976), Bowles (1988), Carnoy and Levin (1985).

[13] For example, for a review of some of the literature taking a radical political economy perspective on education in Brazil, see Kuenzer (1987) and Arruda, Nosella, Santos, and Young (1988).

[14] I am not arguing all the social sciences are one field, although there is something to that view. Most precisely, what I wish to say is that some works by "non-economists" are so close to radical or institutionalist perspectives that a blind review could not tell the difference.

[15] For an interesting look at economic rhetoric, see McCloskey (1985).

[16] For an interesting examination of how educational research serves as a political tool in the USA, see Weiss and Gruber (1984).

[17] Few neoclassical economists seem willing to face head-on the implications of second-best theory. For two attempts, see Friedman (1984) and Rakowski (1980).

[18] Neoclassical economists would respond that even if rice was desired, the comparative advantage of yacht production in this case would imply that it is more efficient to build the yacht and trade it for rice. However, in the real world this is not what actually happens. Thus, for example in Brazil the comparative advantage argument that was used to turn bean production to sugar production for gasohol yielded less beans available for consumption (including imports) and probably significant losses for the poor.

[19] While radical economists will often make use of cost-benefit data to examine rates of return to different groups or classes, some also will treat overall social rates of return as if they had some sort of efficiency meaning. One attempt to get at the problems with the efficiency notion from a radical perspective is provided by Gordon (1978).

[20] See, for example, the work of Adams (1988), Tedesco (1987), Gajardo (1986) and many of those whom they cite.

[21] I do not wish to leave the impression that I reject market allocation mechanisms. They are often convenient and useful, but there is nothing sacrosanct about them, especially when we abandon false notions of social efficiency. Perhaps most pernicious is the delegation of the nature of employment opportunities as derivative from market structures governed by money votes for products. Whether jobs are rewarding and plentiful should be at least as important to any sensible conception of social efficiency as the "proper" balance between yachts and beans. As discussed at the end of Section 2, we need to consider where we wish to go and set appropriate constraints on market mechanisms so that incentive structures reflect our goals, whether they be better jobs or autos that pollute less.

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The role of the State in education

Juan Carlos Tedesco[1]

Introduction

1. It has become commonplace to speak of the crisis of the paradigms by which we try to understand social reality. The challenging of traditional models of thought produces different reactions. In some cases — fortunately rare — it triggers a defence of the old models, further accentuating their dogmatic nature. In other and more frequent cases, it leads to concern with only particular and immediate aspects, favouring a so-called pragmatism apparently freed from the constraints of models of wider scope. The present analysis seeks to fill the gap between attempts at an all-embracing approach and a short term pragmatism which prevents us from understanding the logic of social actions and hence rules out all possibility of participating in their determination.

Ideas concerning the State provide an illustration of this theoretical debate. On the one hand we note a process of "universalization" of the mo[illegible] the modern State as exemplified by Western European countries, gi[illegible] to proposals of a universal nature (Kazancigil, 1985). On the ot[illegible] this trend clashes with the immense socio-cultural diversity of Third World countries. We are not concerned here with making a thorough analysis of the theoretical and practical problems arising from the development of the modern State. Nevertheless it should be borne in mind that the model, as it exists in the Western societies where it came into being, serves as a reference for peripheral societies (where it finds its major expression in theories of development and modernization).

It is important to begin these considerations with two remarks. The first, obvious but necessary, relates to the need to avoid extrapolating, on the basis of certain problems, categories of analysis and strategies of specific solutions to a given context. The second is that the analysis which follows must be placed in the context of the particular situation of a region of the Third World (Latin America) where the incidence of the development of this model of the modern State has been considerable.

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2. The text is in three parts. The first part sums up how the role of the State is seen in relation to major contemporary trends in sociology and political science in dependent countries. The analysis of the role of the State where education is concerned is placed in the overall context of the analysis of the State and its relationships with civil society and all the social protagonists concerned.

The second part contains a consolidated description of the part the State has played in the field of education in recent years, and an analysis of the impact of the economic and social crisis which Latin American countries have undergone. The third and final part offers some thoughts on the future of relations between the State, education and society, in the context of a process aimed at achieving development and equity. It is in this context that thoughts on the future of educational planning are formulated.

The State and society

3. In recent years the State has been the target of widespread criticism from both neo-liberal and leftist quarters. This criticism has acquired an authoritative character, through the political and theoretical line of argument adopted, since the modern State in its contemporary form (that is to say the Keynesian State, the Welfare State, or whatever other name one may care to give the form taken by the capitalist-democratic State since the end of the war) began to show symptoms of crisis whose nature, some believe, is structural.

On the *administrative* level, criticisms have related to the high cost of centralized bureaucratic organisations, the lack of innovations and the partial failure to meet objectives set with regard to equalization, etc.

On the *political* level, the entanglement of the traditional political forces (the parties) and the trade unions would seem to have become such that it challenges the legitimacy of the system of political representation, in particular by reason of the increasing importance of the voice of the unions in decision-making.

On the *economic* level, the State is reproached with failing to solve the problem of unemployment because of the increasing difficulty of maintaining high levels of development. The balance between the various social sectors – established on the basis of the existence of abundant resources and high growth rates – is becoming ever more delicate, and gives impetus to the tendency to particularize and fragment negotiations at the local or regional level (Schmitter, 1986).

These criticisms were nevertheless made after a long period during which the policy of the capitalist-democratic State in developed countries was considered sound, and its results came up to expectations. What enabled this capitalist-democratic State to enjoy such credibility and to achieve such an adequate performance after the end of the war was its real possibility of meeting the needs of various social sectors, as testified by the increase in the share of public and social expenditure in the GDP. Available data indicates that despite the economic crisis of the 1970s, social security expenditure in EEC countries has increased, attaining between 20 % and 30 % of the GDP (A. Borón, 1986; S. Rassekh and G. Vaidanau, 1987).

It may be noted also that this model depended on the close co-ordination that existed between the various sectors of the social structure; there was close liaison between the social protagonists and the political forces and forms of State participation.

In any case, the crisis of the Welfare State is a phenomenon specific to developed capitalist societies and occurred after a series of important problems had been solved, namely:

- The social incorporation of the population, or in other words the universal constitution of citizenship.
- The implementation of a legitimate institutional system through which decisions are adopted and accepted.
- The setting up of an effective administrative organization depending on the State (as in the French model) or on civil society (as in the Anglo-Saxon model) (Badie and Birnbaum, 1982).

Co-ordination and consensus no longer suffice to eliminate conflicts. Nevertheless, the present degree of legitimacy is sufficient to absorb them, so that society can function normally.

4. Sociologists and political scientists have often concerned themselves with the role of the State in dependent societies, especially in Latin America. It is difficult to summarize everything that has been written on this subject, but it would doubtless be no exaggeration to say that by and large, doubt and uncertainty prevail over proven assertions.

A recent analysis by A. Touraine (1987) advances a series of hypothesis which could possibly serve as a starting point for a more precise analysis of the education sector.

Touraine points out that the fundamental characteristic of the development of dependent societies is the *disjunction* between the social protagonists, the political forces, and the State. Dependence means that a large share of economic capacity lies outside the country, and prevents the consolidation of either a sovereign State or the social protagonists within it. According to Touraine: "the characteristic of dependent and colonized societies is the disarticulation of, or the partial lack of, a link between, modernization, social aspirations, and the role of the State; or to put it in more analytical terms, between economic systems (social aspirations), political systems (modernization, that is to say social and national integration) and ideological systems, organized around the defence of national or territorial identity against foreign domination" (Touraine, p. 25).

This disjunction gives rise to what Touraine calls the *hyperautonomy* of the political and cultural protagonists in relation to the social protagonists (defined according to the place they occupy in the economic process). This explains what Tokman (1985) has called the "weakness of the protagonists", manifested for example in the existence of an industrial mentality in the absence of an industrial bourgeoisie, or of a revolutionary ideology without revolutionary movements; and in general, in a *considerable capacity of expression* combined with a *remarkable instrumental weakness.*

This disjunction or hyperautonomy does not necessarily mean that there is a clear and precise separation between the social protagonists, the representative political forces and the State. On the contrary, weak development and disjunction lead to a lack of differentiation and the absence of real social protagonists. According to Touraine: "the European democracies were powerful to the extent that they represented the organized social forces and classes, especially the working class organized in trade unions and the capitalist class organized in financial groups and organizations of entrepreneurs. The situation is quite different in Latin America, where it is easier for a social group to penetrate the mechanism of the State than to form a representative party" (Touraine, p. 13).

In place of a national sovereign State born of a political system representative of the country's social forces, there is either a repressive system which does not allow the formation of a system of political representation, or an excessively open political market that is not controlled by a central hegemonic body. In this context, the alternatives are corporatism in the State itself, or the subordination of the social protagonists to political logic. The relative absence of an hegemony explains the changes which continually occur in Latin American countries and the ease with which they switch from one type of ideological and political platform to another, from one societal proposal to another. This is why one of the most evident characteristics of the political situation in Latin America is the significant gap between the political platform and reality, between precepts and practice, between the possibility of making a decision and the capacity to implement it.

5. The propagation of neo-liberal ideas over the past decade, together with the economic crisis linked with a considerable foreign debt, has accentuated some of the above features and has given rise to new phenomena. As it is well known, in dependent countries the State is constantly conditioned by the two-fold logic of foreign and domestic relations. In the case of Latin America, the introduction of neo-liberal policies between 1970 and 1980 was in some cases combined with highly authoritarian domestic policy implementations. This combination led to a weakening of the State as a nation and a strengthening of the State as an instrument of repression, accentuating its illegitimacy. The tightening of State control subsequent to

the debt and the consequences of adjustment policies (reduction of social expenditure, recession, rising unemployment, etc.) also contributed to this phenomenon, which ultimately resulted in a considerable loss of autonomy on the part of the State in the formulation and implementation of economic and social policies (CEPAL, 1985; Graciarena, 1984).

Following this loss of autonomy because of external factors, a quite complex internal process occurred in which – in most cases – liberal democratic régimes were established (or re-established). The fragility of these régimes and the difficulties encountered in putting them into effect are obvious. All the analyses confirm, in varying degrees, the aggravation of social inequalities and the inability of the State to meet essential social demands. Thus societies became even more ungovernable and took different forms from one country to another, ranging from open urban or rural guerilla warfare to wildcat strikes and systematic actions organized by trade unions and other mass organizations to back up their claims.

From the angle with which we are concerned, the aggravation of inequalities would seem to be associated with an equally significant accentuation of the trend towards a corporate State. The crisis is reflected in a greater degree of political fragmentation, enhancing the role of pressure groups and corporate forces, which gain ground over the traditional political forces, notably the parties. In conclusion, social inequality also manifests itself through a different capacity of society to organize itself and to put over its demands.

This entails the obvious risk of the State aggravating inequality by reason of the under-representation of organized minorities, and ceasing to compensate and co-ordinate collective interests (Loaeza, 1988).

The extent to which the State is corporative differs very greatly between developed capitalist countries and dependent countries. In the former case, the social situation is relatively homogeneous, and all sectors are incorporated in political life and are able to make their voices heard. In the case of dependent countries, there is a large sector which has no voice, resources are markedly less, and there is a narrow margin of legitimacy and consensus for political action.

6. The disjunction which characterizes the development process in dependent countries partly explains the customary lack of efficiency of State management. Nevertheless, in this general context, some specific aspects which have had a particular influence on the forms of State management are worth noting.

Some authors have formulated the hypothesis of "disordered expansion" of the State (Martins, 1984), leading to the absence of an overall system of State control and consequently the co-existence of a multiplicity of different logics from one State sector to another (economic, judicial, educational, etc.) or from one geographical or hierarchical level of the bureaucracy to another. The non-existence of a "system" bears no resemblance to the Anglo-Saxon model of State organization, which is characterised by the decentralization of authority and the close involvement of civil society in decision-making. By contrast, the absence of a "system" means a fragmentation and segmentation of authority, which — having regard to the neutralization of decisions through lack of operational or other similar mechanisms — leads to the paralysis of the administration, anachronism, rigidity, and in the final analysis, inefficiency.

The economic crisis and recent policies could well further accentuate these general features. In the first place it is possible, though there are not sufficient empirical studies to prove it, that lower salaries and the State policy of seeking to reduce the number of civil servants are responsible for the most highly qualified of the latter leaving the civil service.

At the same time, there is a decline in equipment, installations, and ultimately everything relating to management capacity and the quality of service. It must not be forgotten that cut-backs in resources have very different consequences depending on whether or not they are of a temporary nature. Maintaining civil service salaries at a low level for one year does not have at all the same effects as keeping them low for five or six years. Similarly, reducing capital outlay on equipment, building maintenance, etc. over a long period does not have the same consequences as doing so over a short period. Not only are the effects more marked, but in some cases they are irreversible (Lagos, 1987).

Secondly, mention should be made of attempts made in certain countries to reform the role of State. These projects generally lie in the framework of policies of decentralization and seek to achieve greater efficiency, introduce more adequate procedures, and broaden participation in decision-making. We shall make reference to the specific case of education in what follows; we wish simply to emphasize here that the situations are extremely heterogeneous and that the impact of these reforms has not yet been evaluated. In some cases, decentralization takes place in the framework of authoritarian political régimes and is consequently associated with the possibility of consolidating the differences between different regions and tightening social and political control. In other cases the aim is on the contrary to transfer authority and resources to various local bodies in the context of a process of political democratization and greater participation of the people. Finally, decentralization may be undertaken for economic and budgetary reasons, in which case only problems and responsibilities are transferred, and not resources.

In most cases, these reforms are fairly recent, and have been initiated in a situation of economic penury. This fact could seriously affect their success, in view of the weakness of mechanisms of compensation and transfer of resources from richer to less well endowed areas, not to mention the weakness of the central government, which is not easily able to take on the new tasks inherent in a programme of decentralization.

The State, education and the economic crisis

7. From a general theoretical point of view, and though national situations vary, it can be said that educational development in Latin America was in the past linked with the political and ideological system rather than with the productive system. Education expanded more than other social services. Moreover, the educational aspirations of the populations were high (beyond their individual possibilities) and exceeded the real possibilities of meeting them. Education developed very considerably in most Latin American countries with effect from the 1950s. This development may be assessed by comparing the educational level attained by two successive generations. In Argentina, where education has nevertheless been developing for a long time, the parents of one third of the students did not complete their primary schooling. The political and cultural factors associated with this phenomenon are various (Rama, 1984), but the State clearly played a fundamental role in meeting educational demands.

This role was markedly greater in primary education. However, the incorporation within the education system of social sectors which had formerly been excluded had two important consequences. Firstly, the continuance of high levels of exclusion, due mainly to the significant percentage of pupils who failed in their studies during the first years (therefore failure to acquire basic cultural codes); and secondly an increasing differentiation between different types of schooling, accentuating the existing difference in quality and closely linked with the distinction between public and private education. The features of this differentiation, and its degree, vary from one country to another. However it has been shown that where there was formerly a tradition of high-quality public schooling, internal segmentation and differentiation have markedly increased in recent years (Braslavsky, 1985).

8. With the advent of the present economic crisis, the traditional situation underwent important changes. We shall try to sum them up here, placing them in four different categories: educational coverage, quality, allocation of resources, and management capacity (Tedesco, 1987).

Consequences of the crisis on the coverage of the education system

Where educational coverage is concerned, three phenomena have to be emphasized: (i) the expansion of pre-school education, a field in which the State plays an important role; (ii) the increase in the failure rate in primary schools; (iii) the diversity of situations with regard to enrolments at the secondary and higher levels and the trend towards the broadening of the role of the State in schooling.

These phenomena may be interpreted as follows:

- Where the underprivileged classes of society are concerned, the crisis interrupted the process of incorporating them in secondary and higher education and reduced their possibilities of access to primary education.

- With regard to the middle class, several situations exist. There is in general an increase in the demand for State schooling, and this demand is met by the State. For it is the middle and upper classes who benefit most from pre-school, secondary and higher education. The crisis has meant that the State has had to assume greater responsibilities in order to satisfy the middle class, who can no longer afford the cost of education. Unfortunately we do not have sufficient information to analyse these questions in greater depth, but it may be assumed that the State's additional educational responsibilities to the middle class have led to an even more marked internal differentiation. State education is becoming more an education for the masses, while private education is becoming more élitist.

Consequences on the quality of education

9. The increasing degree of internal differentiation raises serious doubts as to the ability of the State to guarantee a minimum homogeneity of quality having regard to the objectives of national and cultural identity and unity. Unfortunately it is extremely difficult to analyse this problem, by reason of its nature and of the lack of information. However, two points may be emphasized: the problem of scholastic failure and that of cultural homogeneity in the context of an accelerating process of scientific and technical changes.

Statistics reveal the low yield of education systems in Latin America and indicate that in some countries the situation has worsened in recent years (Unesco, 1987). The highest failure rates are observed in the first years of primary schooling. The fact that the State is to a certain extent unable to guarantee the acquisition of a basic education is due to many factors of a cultural, political, economic and pedagogic nature (Tedesco, 1983). Without going into detail, it can be said that this failure is linked with the State's negation of an important part of the national cultural heritage.

Studies carried out on this subject have repeatedly shown that the "universal" cultural pattern inculcated is that which reflects the life styles of the privileged and middle class urban population. This can easily be seen in the language employed, the values and standards of social behaviour taught, and most of all in the cognitive skills that are presupposed as a condition of scholastic success. In this context, the failure of pupils of working class background is not due to the fact that they have not assimilated universal knowledge but to the fact that they have not assimilated knowledge foreign to their own culture.

This problem is most evident among indigenous populations, because their educational methods are neutralized by the different linguistic codes which come between teachers and pupils.

Furthermore, since the field of knowledge is nowadays greatly expanding, it is important to analyse the problem of quality from the point of view of what is and is not included in the school curriculum. In other words, we must evaluate the obsolescence of existing curricula. The accelerating expansion of scientific and technical knowledge is concomitant with greater respect for the cultural identity of peoples, and this is not often reflected in the curricula. The economic crisis makes things more difficult in two ways. On the one hand, there is a growing contradiction between the urgent need to improve the quality of education and the resources available for doing so. Secondly, the lack of resources means that the lack of relevance of curricula extends to other segments of the education system which traditionally provided high quality education.

In-depth studies of this subject are certainly necessary. Available elements lead us to assume that the gap between the culture learned at school and "social" culture is widening. To put it another way, no form of culture of social importance — neither "popular" culture nor modern scientific and technical culture — is reflected or reproduced in the culture conveyed by the existing education system, particularly in public education systems that cater of the education of less privileged social groups.

Impact on available resources

10. Recent studies testify to the magnitude of the impact of the crisis on resources, and analyse the consequences on policies in this field (Lewin, 1987).

Apart from overall cuts in expenditure, two aspects are worth emphasizing:

(a) The increase in the share of the wage bill in the budget, it prevents or hinders the improvement of the quality of education, because not only are teaching materials not replaced, but investment in new technologies and in the maintenance of building and equipment are blocked.

(b) The distribution of resources by levels tends to favour secondary and higher education at the expense of primary and adult education.

These two phenomena show that the criteria adopted for the distribution of resources are out of line with the objectives of economic rationality and social equity. The choice of criteria depends in large part on the ability of the different social sectors to express their demands. The unions formed by teachers and students at the secondary and higher levels are powerful social protagonists with a high capacity of organization. They therefore exert a strong influence on the decisions made by those responsible for the distribution of resources.

Impact on the management capacity of the State.

11. A general analysis of the management capacity of the State has already been made above. Unfortunately, available information does not make it possible to establish whether the State's educational management capacity has been affected more than the rest of the public administration, and in particular other social sectors. Nevertheless, the two following phenomena lead us to believe that it has occurred.

Firstly, the negotiating power of the education sector has markedly weakened in relation to those of other sectors where the allocation of resources is concerned (W. Garcia, 1987). The argument advanced is that education is no longer a priority area for public resources because it is ineffective, over-developed — as testified by the high proportion of unemployed people holding educational qualifications — and has little influence on social democratization, etc. This argument is open to criticism. Nevertheless, a decline in the management capacity of the education sector is observable, and this creates a truly vicious circle: administrative weakness aggravates the effects of the lack of resources and reduces the possibilities of reversing the situation.

Secondly, teachers are a majority force in the public sector. The decline in their salaries has created a general malaise, and their strikes have paralysed activities for long periods. The most serious problems have arisen in Argentina, Bolivia, Peru and Venezuela. In recent years the demoralization of teachers, their active resistance, their absenteeism and so on have not only prevented the introduction of innovations but have also had a detrimental effect on the normal accomplishment of traditional tasks.

Though in some cases even the private sector has been affected, the public sector has obviously been more directly affected by this problem, and the qualitative differences between the two sectors have been further amplified.

Future prospects

12. When we consider the future prospects of education and the role of the State, we note that certain problems have already been solved.

Firstly, we no longer have to ask ourselves whether the State should play a larger part. The problem henceforth lies much more in ensuring that the objectives of the democratization and quality of education are effectively attained. It is only in the framework of this discussion that the definition of the role of the State and of the private sector, that of central government and the local authorities, etc., is justified. Similarly, the fact that the options of State control and a free market are not antagonistic and that the one does not exclude the other is generally accepted. In short, this period during which the State has come under serious criticism has without doubt focussed attention on the problems of inefficiency, clientelism and bureaucratization, problems which subsist in the public services. On the other hand, the application of the neo-classical paradigm has led to disappointment and scepticism by reason of its anti-democratic effects and its weak impact on quality and efficiency.

Consequently the discussion now centres around adequate strategies for facing up to the challenge of *efficiency* and *equity*, objectives traditionally considered as being mutually exclusive. We can no longer assert that the State is still inefficient, but neither can we be certain that homogeneous public policies alone guarantee an equitable distribution of goods and services.

Secondly, mention should be made of the problem of the internal differentiation of the State mechanism and the growing importance assumed by local and regional levels of government and by other sectors of activity. There exist various forms of division of authority to deal with certain problems and in certain geographical areas which are inconceivable at the overall or national level.

Thirdly, we must not overlook the fact that discussions on the role of the State in Third World countries take place in a context in which the State's power to act is weakened by the economic and financial crisis and by the growing demands of the people for more participation and democratization. The transfer of responsibilities from the State to society does not always seek to ensure higher standards of quality and efficiency of service, or the greater participation of users in determining what that service shall be; it may be simply a transfer of financial responsibilities.

Furthermore, it must be borne in mind that Third World States act in accordance with a two-fold logic: internal and external. This creates difficult situations. The weakening of the State as a nation (from the point of view of sovereignty, autonomy of decision-making, etc.), aggravated by the severe conditions imposed by policies of adjustment to cope with the debt problem, may create internal conditions liable to strengthen mechanisms of authoritarian political control. The difficulties encountered by present-day democratic régimes in Latin America in making internal participative measures compatible with a strong capacity for external negotiation reveal the complexity and fragility of such situations.

13. The analysis of the role of the State on the basis of the two-fold challenge of equity and efficiency makes it possible to enumerate a series of problems which are closely interrelated but which must be clearly distinguished one from another in order to facilitate their understanding.

In the context of policies of *equity*, we shall deal with the questions of the *allocation of resources* and the *quality of education*. Where policies of *efficiency* are concerned, we shall consider the possibility of introducing greater *institutional responsibility for results*.

Allocation of resources

14. The role of the State in the allocation of resources can only be discussed if we consider that austerity will remain a fundamental constraint in the future. The economic crisis afflicting the Third World is not conjunctional, and even if negotiations easing the strain of the debt provide some measure of relief, restrictions will persist in the short and medium term.

In a period of austerity there is increased competition for the use of resources. This scramble for a share of the limited resources available occurs between social groups and between sectors of activity. Where education is concerned, there is competition from two other powerful protagonists: "the military (and militarist circles), and those who advocate cuts in the resources of the public sector in order to speed up economic development" (Carnoy, 1986). Competition is also keen within the education sector itself, between those who favour giving priority to basic forms of education (primary schooling, literacy training, adult education) and those who prefer that priority be given to higher education and to scientific and technical research.

In discussions as to the value or otherwise of investing in education, some have pointed out the importance of education in the process of development and have suggested that the education sector take the initiative.

Criticism levelled at theories of human capital and certain phenomena such as unemployment among educated people and the continuance of inequalities in income distribution despite the expansion of education have considerably detracted from the possibility of negotiation on the part of those responsible for the education sector where the allocation of resources is concerned.

In the more developed countries this discussion is beginning to fade into the background. More and more countries are convinced of the importance henceforward of being informed, of possessing knowledge and being capable of generating it (intelligence). The future of the education system is one of the central concerns of all developed countries (J. Lesourne, 1988) and it is closely linked with the need to remain competitive. In developed countries, awareness of the importance of education and training always exists in both the private and the State sectors. Business firms invest considerable amounts in training, research and development, and this results in the increasing privatization of the production and distribution of knowledge. In so far as knowledge is considered as a valuable capital, its production and distribution have characteristics similar to those of the production and distribution of all other goods and merchandise.[2] The formal education system is then responsible for providing a sound basic training allowing the subsequent development in both the production and the consumption of goods and services. The State is supposed to make the system more flexible so as to pass from one form of education to another. It decentralizes the responsibility for the implementing of educational programmes and its role is confined to establishing broad guidelines and evaluation.

In Third World countries, by contrast, it cannot be said that there is a consensus on the priority to be accorded to education in development strategies. The need to ensure the continued expansion of education and the universal right to education is recognized, but these intentions have not always given rise to concrete policies on the part of the public authorities. Furthermore, the weakness of the private sector does not allow it to act as an alternative. Moreover, the private sector often seeks to acquire public resources to cover the cost of upkeep of schools attended by children of the more privileged sectors of society.

Consequently, in Third World countries it is urgently necessary to enhance the role of education in the development process and to increase the share of public resources allotted to it. The greatest dilemma is to determine whether the allocation of resources should favour basic education or higher education. In recent years post-secondary levels have developed more rapidly under the pressure of social demand. The middle and upper classes, who are better able to make their voice heard, bring pressure to bear in order to increase resources allotted to the higher levels of education. They feel the effects of the devaluation of holders of educational qualifications and want to continue their studies for a longer period so as to have a chance of obtaining a high-level job. From the point of view of equity, it would be desirable to direct resources devoted to higher education into lower levels of education. Indeed large sectors of the population have been barred from education in the past, not without serious political and social consequences. On the other hand, from the point of view of the national interest and in the perspective of an endogenous development process, we must not under-estimate the importance for a Third World country of the allocation of public resources to the strengthening of their scientific and technical capacity. The economic crisis has aggravated the traditional weakness of dependent countries where their scientific activity is concerned. At the same time, their consumption of technology has fallen off, and only a substantial increase in their endogenous technological capacity will enable them to develop.

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[2] This is why the public use of certain knowledge-intensive private products is increasingly difficult. Software is a case in point.

The question arises differently in different Third World countries, depending on the stage of development of their education system. But nobody denies that basic and primary education must be made universal, and that education subsequent to the compulsory stage must be limited in the light of certain criteria (the capacity of absorption of the labour market, individual merit, the capacity of the system to absorb candidates and to provide quality, or a combination of the two).

The challenge of coping simultaneously with the problems of the provision of basic education and the provision of higher education requires the criteria to be clearly defined. In other words, the validity of a policy favouring one level or the other can be assessed only in terms of its effects on the education system as a whole. Selective policies of access to higher education are justifiable only if there are systematic and efficient policies of expansion at the basic level.

So it is not a matter of choosing one option and rejecting the others. If social development is to be democratic, the problems of basic education must be solved first. It is also necessary to strengthen scientific capacity, favour the training of highly qualified personnel, and promote the production of knowledge. The medium and long term solution of social and productive problems so as to ensure the development and availability of subsequent resources depends on this. Consequently the criterion adopted to evaluate policies at the level of basic education must be its impact on *coverage* (the elimination of failures, drop-outs, etc.), and the criterion for evaluating policies of higher education must be the *quality of what it produces* (in terms of knowledge and human resources).

In this scheme what must the role of the various social protagonists be, and what must the role of the State be? It is evident that if decisions concerning the allocation of resources continue to depend on the relative influence of each pressure group, inequalities will not only be accentuated, they will be consolidated. The alternatives available to break down this "market" logic are to be found in the mechanisms of *concertation* which enable the State to play its compensating role effectively, and in transferring more resources to the least privileged sectors. The future of the principles of equity in the development process of poor countries depends on the definition of these mechanisms and the efficacity of their results.

Quality of education, social equity and role of the State

15. Educational equity depends not only on the number of years of schooling received by different segments of the population, but also on the social relevance of the knowledge acquired during that period. This being so, equity supposes that the population be guaranteed access to a homogeneous minimum of knowledge, values, qualifications, experience, and so on, constituting on the one hand the cultural expression of national unity and on the other the means by which active and conscious social participation is possible.

Traditionally, it is the State which has been responsible for providing the population with this minimum level of education. This heavy responsibility moreover justified the style of administration and the system of organization (namely the centralization of authority, the minimal participation of the community and the uniformity of the curricula). We shall revert later to the question of educational administration. We shall analyse here only the problem of the uniformity of curricula as a strategy of ensuring equality of opportunity. It is primarily a matter of the increasing differentiation between different types of schooling, which is often related to whether the schools are public or private. Secondly, it has been realized that: (i) the enhancement of cultural identity can strengthen national unity instead of weakening it; (ii) the incessant production of new scientific and technical knowledge and the penetration of science in modern culture rapidly make the curricular content of the school, and the values it traditionally imparts, obsolete.

These two phenomena accentuate the cultural heterogeneity that is so characteristic of Third World countries and of Latin America in particular, and which is reflected in what some authors call the "low normative integration" of society (Germani, 1985) or "societies devoid of basic consensus" (Brunner, 1986).

The basic cultural core transmitted by the school is that of a specific sector of society, which is why its dissemination is essentially authoritarian. This is even more evident in societies in which technological differences in level are very marked (Amadio, 1988). What is at issue is the possibility of achieving a broader and balanced distribution of the benefits resulting from the development of a culturally pluralist State.

Admittedly, it is not only a question of curricula and teaching methods, but we must not overlook the importance of the specific role of the school. In short, the question is: how can the cultural isolation of the school in general be breached, so as to bring both local cultures of various kinds, and the working world, into the curricula? Could this destroy or weaken national unity? From the cultural point of view, and still in the same context, we are once more up against the problem of mechanisms of concertation. Even if we have abandoned the idea of a unique and homogeneous model, it is still possible to establish the rules of the game and reach an agreement of co-existence and mutual respect. The role of the State would then be not to impose a given cultural model but to encourage recourse to values and forms of organization reflecting the essential agreement. Among these values, solidarity, creativity, participation and efficiency are most often cited as being closely linked with endogenous development strategies. The education system would have a significant role to play in disseminating them through school socialization.

The State and its responsibility in the implementation of educational programmes

16. We shall now tackle the question of responsibility for the management of the education service. This problem is closely linked with the previous ones, but we shall deal with it here from the angle of educational administration. The discussion covers two main points:

- The role of the State and of the private sector.
- The role of central government and of local (provinces, municipalities, district, etc.) bodies.

Two trends of opinion have emerged in recent years, one favouring privatization, the other advocating decentralization of State administration. Each advances arguments in favour of the option chosen based on experience. The only possible conclusion is that one must not generalize.

The importance of the social, political, economic and cultural *context* (in which the options are defined) is fundamental in determining what line to take. As we have already mentioned, the decentralization of educational administration may take place just as well in a democratic political system tending to encourage participation as in a socially centralizing and exclusive authoritarian system (Pescador and Torres, 1985; P.I.I.E., 1984).

Models of educational organization and management are not ends in themselves, but instruments that can help or by constrast hinder the attainment of certain objectives. From this point of view, the most serious problem the educational systems of Third World countries have had to face is the lack of *accountability* which characterizes existing administrative management, especially in the public sector.

This lack of accountability (a characteristic defect of education systems) is often explained by the administrative centralization and uniformity of the curricula. It would seem that, by contrast, strategies of institutional autonomy, decentralization, and community participation in school administration are able to energize schools and give them a sense of responsibility for facing specific social demands. In practice, at least in

Latin American countries, these features have tended to characterize private education, and hence educational services specific to the middle and privileged classes. The theory that the State — in principle responsible for ensuring national unity and providing the people with equality of opportunity — would be free of pressure from particular groups and would seek only to provide an educational service meeting the demands of *users*, finally gave rise in most cases to the emergence of a differentiated structure in which participation and the possibility of demanding a certain standard of quality depended on individual purchasing power. The public service, which in the main provides schooling for working class children, is outside the social control of the community, and consequently its impulsion is such that it is short on innovations and assumes no responsibility for the results achieved.

Here again, the problem is to find a way of introducing the requisite mechanisms into the educational administration to ensure equity and efficiency, democracy and innovation. The results of recent attempts at decentralization have so far been uncertain, and have not been widely published. The questions which most frequently arise centre around the anti-democratic tendency of decentralization, closely linked with the weakening of the role of the State, and the lack of compensatory mechanisms which alone could avoid the aggravation of inequalities between regions and social groups. From this point of view, it can be said that if decentralization is to meet the objectives of democratization and assigned impulsions it must be accompanied by a strong central administration.

Indeed, the central administration must be strengthened on bases other that those of the traditional model. It will all depend on its capacity to *evaluate results* and *even out differences*.

In a decentralized system whose institutions enjoy a high degree of autonomy of decision-making, the starting points may vary according to circumstances. The methods and resources employed to attain the objectives set may also vary considerably. The role of the State is to ensure a certain degree of homogeneity of the end result. To this end, it must be able to evaluate the results of local activities. Parallel with this capacity of evaluation, it must have a considerable capacity of compensation, so as to back up local units with fewer resources of their own and enable them to attain those objectives which are defined as national goals.

This evaluation and this compensation of differences mean that there must be an administrative structure capable of *evaluating quality*[3] and also a *fund of knowledge* enabling decisions to be made in the light of the results of evaluation. The precise definition of these mechanisms depends on specific national circumstances; we simply wish to draw attention here to the need to create these functions for the central educational administration. The efficacity of these functions supposes that the State has an additional component: *information.* It is only through a high capacity for the production of adequate information that timely decisions can be made concerning the identification of problems, the definition of priority policies, management control, the allocation of resources, and so on. Admittedly, more information is produced than is used. But it is an important component of any policy aimed at enhancing the participation of citizens in decision-making and in the control of the implementation of decisions.

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[3] It is important to point out that evaluation should not be confined to assessing scholastic success. It should take account of all the variables *explaining* how this has been achieved, and at the same time should serve as a basis for decision-making.

Educational planning

17. The consequences of the foregoing considerations where educational planning is concerned are complex. We shall not enter into a thorough study of the future of educational planning; we shall confine ourselves to two reflections to sum up the main points of this analysis.

In the first place, a strengthening of the State mechanism is predictable, especially in the most indebted countries. Several authors (Lagos, 1988; Gurrieri, 1987) have identified the principal factors which explain why this strengthening is necessary. On the economic level, the role of the State must be strengthened in order to: (a) negotiate the foreign debt; (b) obtain international financing; (c) step up investment; and (d) formulate a strategy of industrial regeneration.

On the political level, the strengthening of the State is linked with its responsibility for guaranteeing mechanisms of concertation among the different social protagonists. It is worth noting the remarks of Mr. Crozier (1987) concerning the fact that the more protagonists there are, and the greater their freedom to express their demands, the greater the need for organization and management. Though it is not essential for this organization to stem from the State, it seems that only the State is able to centralize everything so as to handle joint problems. What Crozier has said with reference to capitalist countries is even truer in the case of Third World countries, for the State to extend participation to segments of the population which have so far had no voice.

Admittedly, strengthening the mechanism of the State does not mean making it bigger or broadening its sphere of intervention. The paradox of the existence of large but weak States in Latin America has already been pointed out. Strengthening the State means giving it an adequate capacity for planning (Gurrieri, 1987) enabling it to cope with the following problems among others: (a)*the lack of resources;* (b) the *growing complexity* of the decision-making process and the need to co-ordinate the different levels and systems involved; (c) increasing capacity to *meet emergency situational demands without losing sight of medium and long term needs.*

In the second place, emphasis should be placed on the need to revise planning models. From the socio-political angle, it seems that at least three points should be taken into consideration in adopting a fresh view of educational planning:

(a) A better knowledge of the social protagonists, their behaviour, their orientation, their capacity, their real possibilities, and their margin of negotiation.

(b) The need to reduce planning to what can actually be planned, confining the action of the State to priority aspects from the functional point of view (definition of priorities, evaluation of results, compensation of differences, development of information systems).

(c) The strengthening of *management capacity* in order to prevent plans and programmes from being confined to their rhetorical formulation.

In short, future educational planning will have to establish its identity and define its role between the complexity of the political process of decision-making on the one hand and the requirements of an efficient administration allowing of the co-existence of numerous alternatives on the other hand.

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Does education need strategic piloting ?

Sylvain Lourié[1]

Part One: Why the question?

By looking at the substance of the radical changes which have affected educational demand and supply we shall attempt to understand why the very foundations of educational planning must be designed and constructed from a new point of view.

1. Changing demand

In the past 20 years, the nature of the educational phenomenon as a reflection of 'social demand' has changed radically. This is particularly obvious in three areas:

- first, there is an increasingly clear-cut contradiction between education seen as a strictly individual act, in the sense ascribed to it by Piaget in terms of genetic epistemology, and the standardized, bureaucratic, collective response which States have now been providing for nearly a century and a half;
- second, individuals' (and not just schools') demand for education reflects aspirations of various kinds, which may be social and civic (inclusion of fringe or minority population groups in the mainstream of national society), economic (ongoing adaptation to changing employment structures), or cultural or ethical (creative participation within a society which preserves its cultural and historical roots while at the same time keeping up with the race for scientific and technological development);

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- third, from the standpoint of the State, respect for, and in some cases even the strengthening of, the traditional role of school as an instrument of national identity conflict with major international trends which shape universal patterns and structures of thinking, behaviour and even values.

One of the consequences of this diversity of demand is that the clientèle for education, i.e. those demanding an 'educational product', is no longer restricted to the children and young people for whom school was originally designed and has since developed. Today, it includes not only the children and young people rejected by the school system but also adults of all ages from every social class. Lifelong education is thus a very real demand. As a result, this new clientèle is much more heterogeneous than before. A time factor comes into play here (education for all, at any time of life) and also a space factor (since there is a tendency for education to compress space by attempting to attentuate differences and regional or international antagonisms).

2. *Changing supply*

Five factors seem to have helped to change the nature of educational supply, which has hitherto been confined mainly to formal school systems ('school' as such), designed and regulated by the State.

(a) The State monopoly of education is being seriously eroded. For one thing, the mistakes or even dangers resulting from a uniform bureaucratic response to different individual needs have gradually come to light and been noted; and for another, the time frame of national political life (the electoral process, a government's expectations, etc.) does not coincide with that of the educational process, especially when the latter is no longer confined to the period of education at school—which itself is very much longer than any political lifespan. In short, disregarding the question of resources, the State is not really in a position to offer a personal educational service and provide all citizens with the opportunity of entering or leaving a variety of educational and training systems at different times throughout their lives.

(b) Any change in educational provision depends on the tension between the strands of the relevant 'social fabric'. In other words, as intermediary bodies and group structures have gradually assumed greater weight and responsibility within the social order, it may be said that the threads of the 'social fabric' have become more tightly woven, since a greater number of needs are expressed by a greater number of social actors. For example, in a highly structured country, if the education provided by the school system needed to be radically altered, it is highly unlikely that such a change would actually come about, for it would meet with resistance from professional groups and unions which see their social role not only as a means (to serve education and society), but as an end (to defend their own interests). In the developing countries since decolonization, and also in the industrialized countries, history has shown that the fabric becomes progressively more closely knit with the gradual development of a more participatory—or, to put it more simply, more democratic— national society. Any change in educational provision becomes relatively more difficult to bring about as social structures and actors become more effective in defending the established order.

(c) The productive private sector is playing an increasing part in education and has come up with alternatives to formal education systems. In the United States of America, for instance, the outlay on higher education by private business enterprises (40 billion dollars annually) equals the amount spent by all higher private or public educational establishments concerned solely with providing such education.

(d) At a time of economic crisis, where there is no choice but to adopt a policy of austerity in public spending, the funds needed to cover social sector spending (health, education, social security, housing, etc.) are increasingly channelled towards the productive sectors and national defence; of late, we have even witnessed competition within the social sector between social security and health needs, and educational requirements.

(e) The technological explosion has intensified the emergence of an alternative to the conventional State school system in the shape of distance education networks, computerized information and communication systems, satellite communication across frontiers, and so on, a combination of which makes possible personalized teaching based on self-learning, as well as teaching systems organized outside traditional systems.

These changes in educational supply have given rise to a variety of structures and actors who no longer come under the sole authority of the State, indeed far from it; also to a variety of educational 'products'. Generally speaking, what we have here are not uniform, standardized educational materials and teaching methods, but specific responses to demands from a variety of population categories whose social, cultural and economic requirements may frequently differ.

3. Radical changes in the basic premises of planning

In 1983, in a publication entitled *Educational planning in the context of current development problems*, the International Institute for Educational Planning noted that there were in fact two different kinds of planning: one is effectively integrated into an overall political project, duly accompanied by the necessary means of direction, implementation and control; the other, whose connection with development planning is partially theoretical, nevertheless tends to define itself as a whole in relation to the ends of the contemporary world as it perceives it. On the one hand we have a system, on the other an "attitude". Today, we find that planning is no longer based on the foundations which in the early days enabled it to play that role of direction, implementation and control. Instead, we are witnessing the disappearance of the certainties which made it possible to identify factors that were stable and relatively easy to extrapolate. Thus, for instance, starting out from a demand for 'school places' for a given age group and following a sequence that was invariable throughout the system, from one level to the next, it used to be possible to determine the budgetary resources needed for school 'flows' reflecting a relatively undisputed demand matching the cost of what was practically a single source of supply.

But as the nature and size of supply and demand evolved, it followed quite naturally that the role of national planning, which might be centralized or non-centralized, directive or merely indicative, but was intended to be decisive for conventional school education, was in turn radically altered in both meaning and scope.

We have raised the question chosen as the title for this paper ('Does education need strategic planning') because it suggests a new approach (a comprehensive one, of course, since we are talking about a policy or strategy on the scale of a whole society) which would be neither directive nor even indicative. The fact is that, in a context in which all the components of an overall policy are mobile, the only realistic educational strategies are differentiated strategies, rooted no longer as before in theory, which is planning-oriented, systematic, predictable and linear, but in a precise knowledge of the factors which are vectors of change and are characteristic of any society studied in depth. The range of these strategies is described in the sections below.

Part Two: Identifiable trends

If, then, educational planning, like any other prospective process, must no longer be based as in the past on theoretical, analytical and deductive models, but on a knowledge of an existing situation, it is essential to pinpoint the factors which can be identified today and foreshadow the shape of education in the future. We shall endeavour to single out two groups of factors, the first relating mainly to the contemporary socio-cultural and political factors which already outline the shape of things to come, and the second to 'technical' factors which also give an idea of what the education of the future might be.

1. Socio-cultural and political factors

There appears to be a growing demand for collective participation, not only in the industrialized countries but also in the developing countries, however far advanced they are on the road to industrialization. This observation will be the starting-point for looking on the one hand at trends regarding the attitude to the power of the State, and on the other the trends to be found in industry and the 'consumers' of education.

(a) Role of the State

Soviet experience seems to demonstrate that inflexible planning decreed by the State, itself seen as the sole source of authority and action, had reached its limits during the 1980s. Whether measured in terms of economic growth, employment policy, the mobilization of the resources needed to finance social needs or innovations reflecting the changing requirements of the economy and society, the State's ability to release the creative forces of a community eventually reaches limits which are clearly perceived by the public at large.

An example of this in the educational sphere has been the overproduction of graduates in the Soviet Union as a result of the theoretical vision of a monolithic, centralized society, embodied by a State unable to adjust to the fluctuating demands of the individuals and groups for which it is responsible. In Latin America, the organization of society is heterogeneous, due to a lack of co-ordination between the social actors, political forces and the State itself. This situation may give rise either to a considerable weakening of the actors or to a disorganized expansion of the State, which gives the impression of resorting to a wide variety of different approaches according to the sectors or mechanisms it is meant to be controlling.

These two examples suggest that as historically structured, the State, whose original purpose was to ensure a balance of social forces while acting as custodian of the nation's independence and sovereignty, has become an end in itself. Abandoning its instrumental and supportive role, it has become a be-all and end-all, first for its own public servants and ultimately for the population as a whole.

By way of illustration, some school and academic systems respond less to the demands of the community than to those of the 'servants' of the State, who may be politicians or government officials and who exert a decisive influence when it comes to determining the technical and social objectives, means and functions of these systems. From being originally a service to society, education has become an end in itself for the planners, teachers, administrators and politicians who are responsible for it on behalf of the State. The State is supposed to be acting on behalf of the community, which in fact is at no stage associated with the decisions concerning it.

Some people believe that the response to this all-powerful and to some extent irresponsible State authority lies in some form of decentralization. With the opening up of new prospects in the Soviet Union, for instance, a move is envisaged towards 'root-and-branch' decentralization to stimulate individual initiative and so involve everyone in the economic process. In education, the aim henceforth is to involve users in any decision-making concerning them. Thus the democratization of the management of educational institutions and establishments should entail student participation. In France, where the problem is of a different order, decentralized State structures are taking on an increasing share of responsibility for management.

But does this response to the all-powerful State in the form of a policy of decentralization giving local communities and users a direct say in fundamental choices really provide a universally applicable solution to the problem? It appears that it is not necessarily possible, particularly in Latin America, to establish a correlation between a high degree of decentralization and the democratization of society. In many Latin American countries it has been the centralizing function of the State that has enabled it to guarantee independence, development and opposition to other more particularist forces, such as for example the Church.

Conversely, decentralization does not necessarily provide a 'relevant' response to pupils' and students' needs, or greater economic efficiency, or more appropriate teaching methods. In fact, would-be decentralization might well do the reverse and give rise to action by certain forces at the local level to the detriment of the interests of the majority. Since the financial autonomy of local authorities (provinces or municipalities) is more often than not an illusion, what happens is that under the banner of decentralization, the private sector takes over the school system without a minimum guarantee of social justice, because in some cases decentralization may actually accentuate social and political control. Under the guise of transferring responsibility, it is in fact the problems that are delegated, without the necessary resources to solve them.

It cannot therefore be claimed that the answer to the dominating role of the State is necessarily to be found in a transfer of authority to intermediate or local structures, in cases where the local and national set-up does not provide the guarantees of social justice and cultural development that are needed if decentralization is to become an instrument of democratization and participation. It is consequently thought by some people that decentralization, seen in Napoleonic terms as a form of deconcentration of the central authority, or in more subtle terms as a genuine transfer of authority, cannot be advocated as a universal panacea. The role of the State must therefore be viewed as a fluid one, passing through different historical stages according to the extent to which a nation and its society are organized. In some cases, State power might be counteracted at the central level by the establishment of representative structures which also operate on a nation-wide scale (trade unions, students' associations, consumer organizations, etc.), in preference to contemplating some authority at the subsidiary territorial echelons which might conceivably take over certain public activities such as education.

It is therefore not possible to propose an arbitrary, universal model for responsibility and burden sharing between the State and local authorities according to which the State alone would be entrusted with the power to establish national standards or rules and to ensure their application while leaving the local authorities to control management methods. It would be more realistic to acknowledge that the establishment of national rules, which is part of the State's legitimizing role, and the assessment of results (nation-wide examinations), which is one of the State's prerogatives, can probably not be delegated to intermediate authorities. By contrast, the adaptation of educational programmes, methods and even local or intermediate structures will depend on how well-equipped the local social and political structures are to take on such new responsibilities. In some cases, it is obvious that intermediate educational structures are perfectly capable of doing so, whereas in others, only the central organization will be able to give the regions and districts the necessary dynamism to establish a common system throughout the country. In India, for instance, although there are locally-debated issues which go right up to the central authorities, it is the latter which formulate the policies approved by Parliament and which lay down a programme of action. This programme does involve a measure of structured decentralization and participation in the form of consultative bodies at all levels, but these do not have any direct authority, such authority remaining centrally in the hands of the State.

(b) The diversified educational field and those involved in it

Alongside the State and its structures, which may or may not adapt to the requirements of collective participation, a 'diversified educational field' has become increasingly important in recent years. This covers, in addition to school systems directly administered or controlled by the central State authority or its decentralized structures, a wide variety of educational and training programmes which are very often set up, managed and controlled by employers in the production and service sectors.

Both in the countries traditionally thought of as industrialized and in some newly industrialized countries, we find an increasing part played by firms in providing basic training as well as technical and even cultural vocational retraining for their employees. This action on the part of productive sectors has already given rise to networks not only for the exchange of information but also for the mutual recognition of certificates between firms providing training and retraining programmes. These 'parallel networks' of specialized training and education are often based on the standards of general knowledge provided by the formal education systems themselves, and partly also on the general qualifications acquired within the formal system.

In addition to the direct role of firms, which may provide specific training for their own staff or even offer services to the community at large, there has been the rapid development of distance education systems. These are intended not only for students in higher education but also for those in secondary education, and today provide an opportunity for people living in remote areas and also those who are not of the usual school-going age to join in information, cultural and even vocational training programmes.

Systems of recognition and certification have been introduced, enabling self-learning to be acknowledged as a legitimate and universal method of education and training. Very often, the certificates awarded are not a State initiative, but meet the criteria of a particular firm, sector or occupational branch.

This 'diversified field' is not necessarily made up of converging forces. While business enterprises are playing an increasing part in education and training, this is primarily for purposes of productivity and efficiency, whereas many distance education and self-teaching programmes respond more to criteria of 'relevance' or of personal satisfaction which, though it is in some cases rewarded by a certificate, may be solely a response to individual aspirations. This type of education is therefore diversified, not only as regards available means and tools, but also as regards the aims sought.

There is also a rising tide which invites closer scrutiny. This represents the growing influence of the 'consumers of education' over the choice of the 'products' offered them, either by official institutions or through private or special programmes. Whereas administrative reforms nearly always envisage student or parent participation in school class committees or various advisory bodies, the functioning of distance education systems reflects the dynamics of a free-market economy. For instance, the Indira Gandhi Open University in India conducts thorough and costly market research before deciding on the 'product' to be 'put on sale'. The reason for this is that, as the programmes offered by distant education systems are fee-paying, they must meet precise requirements in respect of personal satisfaction or vocational training. The quality of the product will determine the market's response to it. Alongside these 'commercial' systems, educational and training exchange and participation systems have grown up, prompted by purely personal considerations. These motivations have a considerable effect on the nature of the relationships and exchanges which shape educational and training programmes. It is likely that they herald the ultimate doom of education systems designed centrally and dictatorially for a public which has never been considered as a clientèle but rather as raw material to be fashioned into a shape preconceived by those who prepare and produce official programmes.

Apart from these standing factors, which carry within them the seeds of change and are already to be found in the educational situation as it is today, there are others which affect decision-making and whose origin is to be sought in the progress or setbacks of the scientific and technological organization of contemporary societies rather than in the motivation of individuals or institutions. It is to this second category that we shall now turn our attention.

2. *Decision-making factors*

As of now we can discern three trends which may modify, if they do not already do so, the role of education and, to an even greater extent, the forecasting of its development by means of concepts for new strategies. Our starting-point will be the impact of financial uncertainty on education policies, the availability of information giving a clearer understanding of the potential changes in supply and demand, and finally the new factors which may affect the very nature of decision-making, either in general or specifically as regards education.

(a) Financial constraints

In a situation of regular economic growth, where the resources of the State, regarded as the main educational agent, may be presumed to be relatively stable, an instrument such as an education plan is obviously entirely justified and legitimate. But in a situation of sharply fluctuating resources, in which economic growth is no longer the order of the day, there is little sense in a regulating system based on unchanging premises.

In France today, the traditional five-year plan, comprising a nucleus of priority programmes specifying the financial obligations of the State, co-exists with State v. regions contracts stipulating mutual obligations on common objectives for a five-year period (which is no longer necessarily linked to the timetable of the national plan), transfers of educational planning competencies from the State to the regions and since the setting up of a directorate for evaluation and prospective with the development of strategic planning within the Ministry of Education. The "plan for the future" presented by the Minister of Education in 1987 was not related to the traditional five-year plan timetable; it was rather the "political platform" of a strategy for educational change, coupled with an evaluation of its physical and financial implications, and aiming at mobilizing both the actors of the educational system and public opinion.

If we look closely at the development of planning, it can be seen that plans are meaningful only at the local or 'micro' level, and that their time-span is limited to the short term. They have become a means of implementation rather than the reflection of a process for forecasting action and mobilizing resources. There is of course no denying that for a State which intends to remain strong, planning provides a framework for negotiating debt servicing, obtaining international financing, increasing investment rates and even setting forth a strategy for individual reconversion. But this will be strategic planning, with a medium- and long-term view, and not the preparation of a specific instrument for a set programme of activities.

The first consequence to emerge from this trend is the need to explode the mystery of the plan as a medium- and long-term instrument, seen in macro-economic terms. On the same lines of thought, a planning process leading to precise objectives is perceived by many as being too analytical and technocratic, and irrelevant to the reality of the social and economic scene. While this view is partly explained by the uncertainty of the financial constraints on State resources, the need to show up the plan for what it is can also be explained by the complexity of the social actors wishing to have a say in decision-making concerning educational demand. But in situations where the educational field, and those involved in it, are heterogeneous, compartmentalized and diversified, planning is no longer applicable since by definition it can only exist where the process is a simple one consisting of stable, homogeneous elements.

(b) Availability of information

The second series of forces which influence decision-making and its tools relate to the nature and availability of information. It is accepted that all decision-making today must be based on an optimization of relevant information.

This information is of various kinds, ranging from systematic periodic statistics to sampling and in-depth surveys and leads to psycho-social surveys to determine motivations, these in turn being subsequently sifted, compared and analysed. This moving mass of information, which should ideally be structured by starting with the most complex material and gradually reducing it to statistics, now has available to it new means of transmission and communication. Access to mainframe computers, rapid transmission by diskettes enabling micro-computers to process huge quantities of new information, satellite transmission and videotex which enable information to be transmitted and exchanged, as well as responded to, all of these in theory clearly provide the decision-maker today with a vast potential store of knowledge which should give him far greater scope for creativity than was hitherto the case.

Decision-makers often imagine they have far more latitude for intervention than is actually the case. In fact, if a dense network of information is converted into an organized, readily available information base, giving decision-makers—or their back-up teams—a clear picture of what can actually be done, it is likely that their 'criteria of satisfaction' may be applied more forcefully than before. These information networks and means of communication actually exist. In the years to come they are bound to influence decision-making, which is today still based on supposition but will tomorrow be based on fact.

(c) Quality of information

The third force which may change decision-making, hence the ability to translate community perceptions into action, is the innovation of software reproducing 'artificial intelligence', using concepts such as for example the Expert method, designed to reconstruct decision-making processes. Drawing on the empirical experience of the decision-maker when dealing with real-life situations, artificial intelligence rules out fanciful hypotheses and bases thought structures and methods of action on established experience, backed up by the dense network of information referred to above.

In conclusion, the plan will become a management tool, while analysis and forecasting, with the help of the information networks and computerized reasoning processes, will substantially modify the kinds of options faced by government officials, private enterprises, local authorities and specialized non-profit-making bodies. All of these agents, equipped with new means of information, communication and decision-making, will henceforth be called upon to play an unprecedented role of leadership and intervention in education and training. What kind of process of collective participation and action will result from this is not yet known; and there is also some fear that a possible scenario of polarization may emerge, with considerable power concentrated in the hands of a minority of 'decision-makers'. In that case the next step will be to try to establish some counteracting force.

Part Three: New processes

As we have just seen, planning is meaningless unless it is viewed as a process conducted by a variety of actors within a wide range of structures. As the purpose of planning is not to prepare plans (which are its 'products'), we should examine how far the functions of those involved in planning are likely to change given the context and trends referred to above. If the uncertainty about the medium and long terms is likely to persist, if the decision-maker's actual scope of action is restricted by relatively permanent, hence 'irreducible' factors, then in order to act within the narrow limits left to him it is absolutely necessary for him to receive reliable information and analyses on a regular and frequent basis. This means that the planners' function will be primarily to gather, process, analyse and then disseminate information, and to report on it to decision-makers. In this way, the bases for choosing this or that alternative will be as close as possible to reality.

The fact is that decision-makers do not have to 'take a decision' at a given time, bearing in mind the range of possible options for establishing a set 'line' to be followed. There has probably never been any such set linear system. It is even less likely to exist in a context of permanent shortages and crises. This is why decision-makers today must adopt a less cut-and-dried position, at a time when their analysis is less causal and, so to speak, less technocratic. This does not mean that their approach will be strictly pragmatic and intuitive, or that it should be based solely on their own 'criteria of satisfaction'. We shall now seek to understand the nature of this approach by reviewing the inconsistencies of the present system and trying to outline the concept of strategic planning.

1. Inconsistencies emerging from observed trends

As we have seen, there is no symmetric relation between the heterogeneous factors making up the 'social demand' for education, and the responses offered. As demand grows in diversity and its range of component parts becomes more entangled, traditional responses are no longer adequate, and new responses are at times somewhat inconsistent and divergent. In other words, there is no single field of demands which can be covered by a single field of responses. As there is no linear causal link between these two forces, and they meet by a confluence of factors, the result is synergy rather than a logical predictable construct. This new process is intrinsically more heuristic than algorithmic, and it is consequently impossible to foresee how a response can be provided by establishing a particular configuration of the various factors involved.

2. Thinking in terms of strategy

It is precisely the idea of 'strategy', as used in the world of industry, which corresponds to the approach to any market which is segmented in this way. In the world of trade and industry the notion of segmentation is due to the differentiation of products, services and cost-effect relationships; but the conditions which produce it do not seem to be totally alien to a world apparently so different as that of education.

We have seen that an educational strategy cannot be devised on the basis of calculated projections or forecasts, but must be rooted in an overall knowledge of the complex present-day situation which often carries within it the embryo of future trends; this approach is sometimes called 'forecasting their present'. By detecting the factors which are vectors of change, we may gradually come to understand the nature of the changes which affect the educational order and the demand for education. It is essential to begin by delimiting the areas of uncertainty, such as, for example, the causes of inadequacy between society and the school system, the deficiencies of technical education, the causes of the disaffections of parents and students towards the school "society", etc.

Identification of these areas will gradually make it possible to remove any ideological bias from one's appreciation of the facts. Any understanding of the situation is invariably deeply tainted by its observer's value judgements, and unrealistic objectives are often set as a result of an ideological view of reality. If ideology is no longer the sole criterion for determining objectives, and if objectives are partly shored up by a better understanding of the areas of uncertainty, then two approaches may be adopted. The first might be compared to some extent with that adopted in causal planning, although it is more ambitious as it involves a deeper concern to understand the complexity of the context. This approach is 'strategic planning', entailing a variety of hypotheses to explain a situation that needs to be remedied. These hypotheses may serve as a basis for the construction of response scenarios, since some of them may point in the opposite direction to the end sought. Response scenarios will make it possible to bring these cases of drift back on course. Only once these scenarios have been drawn up will it be possible to identify the combination of means that will be consistent with the ends in view. This approach, which is more flexible than 'planning by projection', goes perhaps too far in that its objectives, once set, cannot be changed. The fact is that objectives are as vulnerable as resources to unforeseen obstacles which may crop up on the path first chosen. An over-technocratic or over-analytical application of strategic planning would disregard the interdependence of objectives, resources and obstacles.

The second aspect of the strategic approach is of a less theoretical nature. It consists of joint action involving a team of actors who 'pilot' educational strategy along a global course, combining the implementation and formulation of tasks with their revision and constant readjustment to ensure that the objectives are consistent with the resources available, and that the resources can deal with the obstacles and are reflected in the constant revision of the objectives. This kind of approach, which is more dynamic and involves far greater participation, means that decision-makers must meet three requirements. First of all, they must be constantly aware of prevailing trends or 'signals' so as to create the necessary conditions for the realization of a 'collective idea', based on a shared vision of the future. This idea can only become a reality if it is based, first and foremost, on anticipation of a hoped-for or expected situation, and if it involves the active participation of the members of the team producing the 'collective idea'.

In addition to a change of attitude by the decision-maker, a second requirement must be met: the establishment of an information and communication system that is both well supplied and highly developed, and which can ensure a continuous supply of observations, analyses and study findings which will serve as the basis for the preparation of scenarios and the mobilization of the resources needed to give effect to the decisions taken and the resulting tasks to be carried out.

The third and final requirement depends on the ability to evaluate contents and strategies, and the resources mobilized. In a continuing information system, decision-makers and their back-up teams must assess the results achieved in relation to the original objectives set. It is this collective action comprising analyses, resource mobilization and ongoing revision which constitutes the strategic planning to be adopted in the future when it comes to determining education policies, and indeed social policies in general.

This dynamic action by agents taking a collective approach which does not systematically follow the cycle 'obstacles-objectives-resources' but can at any given time modify that cycle, will reappear in the way in which the orientation and implementation of educational activities are determined, whether at the central State level, at the level of specific programmes or within public or private institutions.

3. Education, strategic planning and the State

We have suggested that decision-makers should be surrounded by a team of people who are both analysts and, at a later stage, operators. The difference between 'upstream' and 'downstream' planning will consequently be less rigid than it seemed some years ago. 'Regroupings of decisions' will be proposed, which it will be difficult to dissociate from implementation, since general policy analysts will be required to give effect to their proposals, committing themselves as technicians and playing their social role to the full.

In adjusting to the changing relationship between the ends and the means, decision-makers and those around them will no longer follow a predetermined path, but will be required to plan their multiple choices in the general direction of a single objective, as revised and confirmed.

'Strategic planning' seems to foster the emergence within the structure of autonomous action making it possible to narrow the gap between the producers and the consumers of education or training products. If this gap can effectively be narrowed, collective participation will become a realistic goal, and the nature of the 'educational product' will reflect at one and the same time the demands and the resources of both those proposing it and those using it.

This is where responsibilities should be more appropriately shared between groups of individuals, communities, intermediate structures, associations, etc., and the State, whose role should gradually shift away from that of an operator to the more standard-setting one of a compensator. Although it is true that for the reasons referred to above, this sharing of responsibility is not everywhere the same, and cannot be decreed according to a single model, the general trend seems to suggest that as the social fabric becomes increasingly made up of intermediate groups which are effectively autonomous, and to which material and particularly financial resources can be delegated, the State will then be able to resume its prime function of upholding social justice and the values of equity.

There remains the question of the standards for evaluating the results achieved. It is unlikely that the State alone can determine any such criteria. In so far as industry will increasingly take responsibility for educational and training activities, there can be no question of relying solely on the State to bring evaluation back into line with the formal school system. Various professional groupings (banks, insurance companies, airline companies, etc.) have already established recruitment, selection and promotion criteria based on types of training and education whose content, methods and structures they have themselves laid down. One of the key questions which will arise in future will be that of recognizing results achieved by various—and in some cases, as we have seen above, even diverging—ways and means, so as to ensure a collective recognition of proven results. It is likely that such certification or recognition of achievement will be in the hands of joint bodies in which the State will naturally play a major role but over which it will in no case have a monopoly.

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